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BIENNIAL REPORT

OF THE

BOARD OF TRUSTEES

OF

ARKANSAS INDUSTRIAL UNIVERSITY

TO

HIS EXCELLENCY, SIMON P. HUGHES,

GOVERNOR OF ARKANSAS.

BY AUTHORITY.

LITTLE ROCK, ARK.:
A. M. WOODRUFF, STATE PRINTER.
1886.

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REPORT
OF THE
EXECUTIVE COMMITTEE
OF THE
BOARD OF TRUSTEES.

To His Excellency, SIMON P. HUGHES, Governor of the State of Arkansas :—

The Act of March 27, 1871, providing for the organization of the Board of Trustees of the Arkansas Industrial University, designated the Superintendent of Public Instruction, *ex-officio*, as the President thereof, and required that "the President of the Board of Trustees" should make a biennial report, etc., to the Governor. The Act of March 7, 1883, reorganizing said Board, constitutes the Governor, President of the Board, without modifying the requirement of the Act of 1871, as to the biennial report.

Strict conformity to the letter of this provision would require the Governor, as President of the Board of Trustees, to make a report to himself. To avoid this anomaly the Board of Trustees at its annual meeting in June, 1886, requested Col. Geo. M. Edgar, the President of the Faculty, to prepare a detailed report of the condition and practical workings of the institution for the two years ending in June, 1886, which is submitted herewith and incorporated as a part of this report.

In addition thereto we deem it proper that the Board of Trustees should make some further report of its management during the period covered by the Report of Col. Edgar.

Recognizing the Concurrent Resolution of the Legislature, approved April 1, 1885, as strongly suggestive, if not absolutely mandatory, the Board of Trustees at its annual meeting at Fayetteville, in June, 1885, vacated all the chairs of the Faculty, "retaining the President," and reorganized the courses of instruction on a basis that resulted in reducing the number of the Faculty, in the Collegiate Department from nine (9) to seven (7), and an adjourned meeting was held in the City of Little Rock in July, advertisements including a schedule of the courses of instruction having been published and circulated, inviting applications with credentials to be filed for the various positions.

A large number of applications, highly endorsed, from various parts of the United States and Canada, were presented to the Board, and after a thorough and careful examination by the full Board, protracted through the greater part of two weeks, selected on the basis of credentials alone, an entirely new Faculty, excepting the President, was elected, and their work was begun at the opening session of 1885 and 1886.

It affords us much gratification to report in this connection that from our own observation and information that we have been enabled to gather, the Board was most remarkably successful in its selection, both as to qualifications and character, of the gentlemen and ladies upon whom their judgment and choice rested. Under their efforts, and zeal in seconding and supporting the management of the President, the work of the students has been advanced both in quality and results, and it only remains for the people of the State, through their representatives, to afford the means necessary for its improvement and maintenance, to make the A. I. U. a prime factor in establishing and increasing the reputation and honor of the State at home and abroad, and the Institution itself the pride and boast of every patriotic citizen.

The Board of Trustees realizing the desire of the citizens of the State that the Agricultural and Mechanical Departments of the

University should be extended and placed upon a broader basis, in their report for the two years ending in June, 1884, submitted estimates of what amounts they deemed necessary as appropriations for that purpose. But although their estimates were increased, and their efforts and purposes ably and zealously seconded by the Joint Committee of the Legislature of 1885, that honorable body refused to make any appropriation for either plan, and limited the appropriation for the expenses of the two years ending June, 1887, to the estimate submitted for continuing the system of instruction, upon the basis which had been followed substantially since the organization of the Institution—the usual curriculum of literary colleges.

The Board, although anxious to take the responsibility and meet the manifest wishes of a majority of the citizens of the State in the matter mentioned, were thus left without adequate means to effect these much desired reforms. However, they determined to make an effort, and in reorganizing the Scientific Departments prepared courses of instruction that could be practically utilized in the direction sought.

By close calculation they were enabled to divert a portion of the general fund at their command and organized, on a limited scale, a Manual Training School for boys, which they feel satisfied, as far as it has been developed, fully justifies their efforts in that direction, and trust that the Legislature of 1887 may deem it a sufficient earnest of what can be done with adequate means, to induce it to make a liberal appropriation for the purpose of enlarging the facilities and extending the capacity, for accommodating what we believe will be the increased demand for such instruction, as soon as the citizens of the State realize the advantages thus placed within their reach.

Underlying this Department, and as a basis for its future development, a course of Freehand and Mechanical Drawing was established, and a branch of Industrial Art for girls connected therewith, and the Board feels gratified with the results of this work as far as the limited experiment has been carried.

A course of business instruction has also been organized which includes bookkeeping and commercial law, together with such instruction in mathematics and the ordinary English branches as are necessary for their proper understanding.

The recommendation of the Board submitted to the Legislature of 1885, that dormitories or boarding houses be erected on the University grounds, was not adopted, and no appropriation was made for that purpose. But in order that the results of an experiment in that line might be obtained, which could be submitted as an evidence of the advantages of such an arrangement, accommodations for fifty boys were provided in the old refectory or steward's hall, which realized our most sanguine expectations, and wholesome and satisfactory board was provided for that number on the co-operative, or club system, at a very limited cost, and to the expressed satisfaction of all the students who were the beneficiaries thereof.

With the results of this experiment to justify us we respectfully urge the importance of erecting, as soon as practicable, suitable buildings on the grounds of the University, and convenient thereto, for the accommodation of the students, and believe that the advantages resulting will more than repay a liberal appropriation for that purpose. The appropriations for insurance and repairs of the college building were properly expended, and we recommend that an appropriation of a similar amount, \$1,800.00, be made for paying the policies of insurance on the building for the succeeding two years.

The appropriation of \$8,000.00 for supplying a heating apparatus throughout the University building was a wise expenditure, and has resulted in a much more satisfactory and comfortable degree of temperature, conducing to a more healthful condition of the occupants of building.

The appropriation of \$2,400, for a new tin roof on the main building was properly expended, and the building thereby secured from damages resulting from the insecure condition of the old roof.

As a full account of all expenditures made by the Board and under its direction we submit the detailed statement of the receipts and expenditures made by the Regent and Secretary, and marked Exhibit A.

We recommend an appropriation of \$30,000 for the current expenses for the two years ending June, 1889. The full Board at its meeting in June last made an estimate for additional improvements as follows:

For Dormitory for boys.....	\$10,000 00
For Dormitory for girls.....	8,000 00
Steward's hall for boys and girls.....	7,000 00
Residence for president.....	4,000 00
Residence for Commandant.....	4,000 00
Work Shop and machinery.....	12,000 00
Repairs for main building.....	1,000 00
Agricultural department.....	10,000 00
<hr/>	
Total.....	\$56,000 00

And we recommend and urge an appropriation for that amount as the minimum which is essentially necessary, if it is desired to meet the ends contemplated in the organization of the institution, and for the attainment of the results expected and demanded by the citizens of the State.

BRANCH NORMAL INSTITUTE.

The wisdom of the establishment of the Branch Normal Institute at Pine Bluff becomes more evident as time and results become witnesses in its behalf.

The management and control of this institution is placed by law with the Board of Trustees of the University, of which it is an adjunct, and their supervision of it is conducted through a committee of the Board, appointed for that purpose.

The practical and detailed management, however, is entrusted to its principal, Professor J. C. Corbin, to whose capacity, efficiency and fidelity it affords us unlimited pleasure to testify, and to whose report of its management we refer for such information as is desired.

We call attention to the fact that the original appropriation for its maintenance made in ————, is nearly exhausted, and we recommend that renewed appropriations on a liberal basis be made for that purpose.

We feel satisfied that the benefits of that institution would be largely enhanced by the establishment of a Manual Training School in connection therewith, and recommend an appropriation for that purpose of the sum of ———.

MEDICAL DEPARTMENT.

The Medical Department of the University, although located at Little Rock, is under supervision of the Board of Trustees of the A. I. U., and its graduates receive their diplomas from them on recommendation of the Medical Faculty.

The entire expenses of the maintenance and instruction in this institution is met by the members of the medical profession of Little Rock, even to the printing of their separate catalogue, since by the ruling of the State Board of Finance in 1883, no provision has been made by law for the catalogue of the University or any of its branches or adjuncts, in the provisions regulating the contracts for public printing. Previous to that time it had been paid for as other contracts for public printing were, out of the State Treasury.

We respectfully submit that an appropriation for this purpose should be made by the Legislature, although it might be included in a specific appropriation for that purpose for the University.

In this connection it is deemed not improper to state that the first catalogue printed by authority of the present Board of Trustees of the Arkansas Industrial University was never fully paid for on the basis of other public printing, the limited means at the command of the Board having made it impossible for them to meet that unexpected expense in full.

Respectfully submitted by the Executive Committee of the Board of Trustees of Arkansas Industrial University.

JOSEPH W. MARTIN, *Chairman.*

CHARLES COFFIN, *Secretary.*

REPORT

OF THE

PRESIDENT.

FAYETTEVILLE, ARK., December 10, 1886.

To the Honorable Board of Trustees of the Arkansas Industrial University:

GENTLEMEN:—In accordance with a resolution of your Honorable Body, passed in June last, I have the honor to submit a biennial report of the University, embracing important features of my annual reports of 1885 and 1886, together with recommendations for the future, looking to a fuller development of the Institution.

When I arrived at Fayetteville, on the 9th of June, 1884, to assume the Presidency of the University, the discouragements of the situation were many. First among these, was the fact that there had been a series of disagreements between the retiring President, Gen. D. H. Hill, and members of the Faculty, in the administration of discipline, which were supposed to have been the chief cause of his resignation. 2. There was great demoralization among the students consequent upon these disagreements and the laxity of discipline resulting therefrom. 3. There was bitter feeling in the community of Fayetteville, growing out of the controversy. 4. The matters in dispute had been freely discussed in

the newspapers of the State, thereby creating distrust of the Faculty and management, and impairing confidence in the Institution as an educational agency.

This state of things was graphically described by the retiring President, in my presence, in his annual report, and attributed by him to causes which he believed it impossible to remove without a thorough reorganization of the Faculty.

In accepting the Presidency of the University, under these discouraging circumstances, I relied upon the promise of your Honorable Body to give me your co-operation and support in the effort to eliminate from the Institution all elements of discord, to remove all officers and teachers who, upon fair trial, might prove to be incompetent or untrustworthy, and to inaugurate all needed measures to restore confidence in the Institution, and to promote its highest efficiency and success.

The measures adopted by the Board of Trustees, on the two days succeeding Commencement, were highly gratifying, showing a disposition on the part of its members to do what was most needful to be done at that time; and when the body adjourned, a more hopeful feeling was entertained as to the future of the Institution.

To be prepared to devise needful measures looking to the improvement of the discipline and work of the University, it was necessary for me to spend the early weeks of the vacation in examining into the history of the Institution, its methods of work, courses of instruction, standard of scholarship, and the existing regulations of the Board of Trustees; while it was deemed by the Board no less important that I should make a month's tour through the more accessible portion of the State, to mingle with the people and address them, as occasion might offer, on University Education, and on the importance of developing the Arkansas Industrial University to meet the growing wants of the youth of the State.

My reception by the State Teachers' Association which I addressed by invitation at Morrilton, and by the people of the twenty other towns and cities which your Executive Committee requested me to visit, gave gratifying evidence that though confi-

dence in the University had been greatly impaired, there was much interest felt in building it up; while the opportunity to study the educational needs of the State, which the trip afforded me, was a valuable element of preparation for the task of perfecting a system of higher instruction which would be far-reaching in its benefits.

One of the first duties imposed upon me by the resolutions of the Board of Trustees, June 13, 1884, was with the assistance of the Faculty, to draft a code of regulations for the government of the University. These regulations were formulated with great care and were adopted, after amendment, by the Executive Committee, and subsequently approved by the full board.

Additions and amendments, suggested by the experience of two years, have since been made, and the code of regulations as revised, is believed to be well adapted to the conditions now existing in the institution, where youth of both sexes and of a wide range of ages, are taught and governed under the same roof and by the same officers, and where the military system is made obligatory.

From the opening of the session (September 1, 1884), the internal management was characterized by the following features:

1. When the students were not at recitations the sexes were separated, and the females of both the Collegiate and Preparatory Departments being seated in a hall to themselves, the males of the Collegiate Department in another, and those of the Preparatory Department in still another. The sexes were prohibited from communicating with each other without permission, both during study hours and the hours of intermission.

At the sound of appropriate signals the members of each class were required to march to their respective recitation rooms, the females entering from their side of the building and taking their seats together, and the males entering from the opposite side and taking their seats in a different part of the room. In leaving the recitation room a similar order was required to be observed.

The advantages of this plan of managing the sexes are obvious, and the change has been attended with happy results.

2. The male students were required to drill daily for thirty minutes, instead of twice a week for an hour as formerly; exercise given daily for that period being regarded as more conducive to health than that given at longer intervals for double the time, which with immature boys might lead to exhaustion.

3. The young ladies were required to take daily exercise for fifteen or twenty minutes under an instructor, by such methods as seemed best adapted to correct defects of bodily development; some being exercised in one way and some in another, at the beginning, to suit individual needs; and later, all being practiced in general exercises adapted at the development of all the muscles of the body.

4. In accordance with resolutions of the Board of Trustees, the President, assisted by the Commandant, was made responsible for the order in the building and grounds; the Professors, Assistant Professors and other officers, were required to report absentees and delinquencies to the Commandant at the close of each day; the Commandant was charged with the duty of considering the excuses of the males, and a lady teacher, selected by the President, those of the females; the action of both being subject to revision by the President; a just and equitable scale of demerits was adopted, to apply to the majority of offenses against law and order, leaving but a few of the most flagrant for reference to the Faculty.

By these changes, the whole machinery of discipline was systemized and simplified, much to the delight of members of the Faculty, and it is believed, greatly to the benefit of the Institution.

5. A more systematic method of marking the daily recitations was adopted, with the requirement that, at the close of each week, each Professor and Teacher shall enter in books prepared for the purpose, the aggregate mark and the number of recitations and absences of each student in every study, for that period, and state in a foot note the ground passed over by the class; thereby furnishing the President full information of the progress of each class, and of the degree of diligence and success of each student, and enabling him to deal intelligently with the students, giving a just meed of praise to the orderly and diligent, and merited admonition to the disorderly and indolent.

6. More exact methods were adopted for conducting examinations, whereby they were made more reliable tests of the scholarship of the pupils; and the distinctions, based upon them, rendered more valuable to those upon whom they are conferred.

7. The President, from the first day, undertook the supervision of all departments of the University, giving close attention to the examination and classification of new students; visiting the class-rooms to become acquainted with the methods of work of each Professor and Teacher; consulting the Regent as to what was needed to secure the greater comfort of teachers and pupils, to promote cleanliness, to preserve the buildings, and to carry out the wishes of the Board of Trustees in economic matters, in the management of which individual responsibility was not clearly defined.

These, and other features of the new administration, provoked adverse criticism from not a few who had been accustomed to the old regime; but the wisdom of their adoption has been verified by the experience of two years; in the correction of abuses, in the greater stimulus to earnest, faithful effort, in the more effectual means employed for keeping reliable records for the information of Faculty and students, and of the Boards of Control and Inspection appointed by law, in the adoption of a system of control, by which the duties of Professors and students were more clearly defined by regulation, and the discipline of offenders made more certain and uniform, and in so unifying the work of the Institution as to secure the efficient carrying out of its several aims without serious hindrance from conflicting interests.

The work of the Professors and Assistants, during the session (1884-5), was generally good. There were no open ruptures in the Faculty growing out of the administration of discipline, nor were there any serious disturbances among the students, though feelings of distrust were sometimes manifested in a partial or half-hearted conformity to prescribed duties. The period, however, was one of transition; and owing to a continuation of controversies, having their origin in past years, the public mind in the State was kept in continual agitation in regard to the University, during the fall and winter months,—much indiscriminate censure having been indulged

in by some of the writers, to the detriment of the new administration and of the Institution.

This state of feeling was only allayed when, at the demand of the Legislature, through a joint resolution, a reorganization of the Faculty was effected at the session of the Board of Trustees in July following.

In waiving a discussion of the reasons for this action, and of the merits or demerits of those affected by it, I am sure I shall meet the wishes of the people of the State, who have been harassed for years by controversies and criticisms appertaining to University affairs. But hurtful as these controversies have proven, there have been some compensations growing out of the agitation of the questions in dispute, besides the removal of distrust through the reorganization of the Faculty. Not a few of the citizens of the State have learned more about the University through these controversies and criticisms of its management than ever before. They have been led to think of the wants of the State in higher education, of the many advantages which may accrue] to the people from a well equipped University, and of the importance of supplying the means that may be necessary to make the Arkansas Industrial University the most potent agent possible in promoting the growth and prosperity of the State.

It is to be regretted that there has been so much misconception of the aims of the Institution, and so little appreciation of the difficulties under which the Boards of Trustees have labored in endeavoring to build it up. It is important to a proper appreciation by the public of the condition and wants of the Institution that these misconceptions should be removed and the people brought into closer sympathy with its management.

AIMS OF THE UNIVERSITY.

The aims of the University are set forth in the Acts of Congress and of the General Assembly of Arkansas, under which it was established.

The Act of Congress of 1862, appropriating lands to establish Colleges in the States, provides that all moneys derived from the sale of said lands "shall be inviolably appropriated by each State which may take and claim the benefit of this Act, to the endowment, support and maintenance of at least one College, where the leading object shall be, without excluding other classical and scientific studies, and including military tactics, to teach such branches of learning as are related to Agriculture and the Mechanic Arts, in such a manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

It was clearly the purpose of this Act to provide for the maintenance of Colleges, whose leading objects should be to promote the study of branches related to Agriculture and the Mechanic Arts; but in stipulating that "other scientific and classical studies" should not be excluded, and in stating that the object was "to promote the *liberal* and *practical* education of the industrial classes in the several *pursuits* and *professions* of life," it plainly authorizes the organization of schools upon a broad University basis, in which, at the discretion of the Legislatures, the whole scope of language, literature, philosophy, science and the arts may be taught, provided only that the leading objects shall be those above indicated.

To exclude classical and general science from the curricula of a school organized under this Act, or so to fill up the time of the students with other studies as practically to prevent the successful prosecution of them, would be to violate the intent of the Act as surely as to make classical and general science studies the leading ones, and either exclude those relating to agriculture and the mechanic arts, or give insufficient time to master them.

This is plainly the interpretation given to the Act of Congress by the General Assembly of Arkansas; for the Act of the General Assembly of July 23, 1868, accepting the original Land Grant, provides that the sum realized therefrom "shall be forever devoted and applied to the endowment and maintenance, under such laws or

articles of incorporation as may be by the General Assembly hereafter provided, of an institution of learning to be styled 'The Arkansas Industrial University,' wherein shall be taught, in addition to the usual course of study prescribed in Universities, the science and practice of agriculture, the mechanic arts, engineering and military science and tactics," and the Act of incorporation, approved March 27, 1871, further provides for a "Normal School, or Department, therein;" the two Acts *enjoining the teaching of the usual course prescribed in Universities, as well as those relating to agriculture and the mechanic arts, engineering, military science, tactics and didactics, thus providing for the whole range of studies employed in literary, scientific and industrial art and professional training.*

In organizing the Institution in 1872, under this comprehensive charter, the Board of Trustees had before them a most difficult problem for solution. The State was burdened with debt; its industries, which had been well nigh destroyed by the war, were yet languishing for want of capital, want of a reliable system of labor, want of business confidence, and want of faith in the restoration of stable political conditions. Added to these discouragements, was the disorganized condition of the Schools of the State, and the apparent hopelessness of supporting a system of Public Education adequate to the wants of both races. Under these discouraging circumstances, it would have been folly to have attempted to organize the University in all its departments—theoretical and practical. The two important requisites for such an undertaking were wanting, viz: (1) An adequate amount of money to provide the necessary equipment and to sustain a large number of specialists to teach the various departments; (2) Well prepared young men and women to compose the classes in these departments.

Using the discretionary power implied in all such trusts, but specially granted in Section 11, of the Act of Incorporation, the Board of Trustees organized the Institution with the view of adapting it to existing conditions; their first aim being to supply the Elementary training suited to prepare material for the College classes; the second, to supply the Normal training suited to prepare young men and women to become efficient teachers in the common schools of the

State. As the students became prepared for instruction in the higher departments, new professorships were added, so far as the limited annuity would allow; and notwithstanding the meagerness of the biennial appropriations, it is a matter for congratulation, that the University has, for more than ten years, afforded excellent instruction in the usual departments of collegiate training, with technical instruction in Engineering and the Science and Art of Teaching, for the greater part of that period; while a most creditable Medical Department has been sustained for the past six years, in the City of Little Rock, through the enthusiasm and self-sacrifice of a few eminent physicians, without a dollar of expense to the State, either for its equipment or the instruction of its classes. During the period of fifteen years, since the organization of the University, there have been 4876 students matriculated at Fayetteville, 1241 of whom were collegians. Of this number, 85 have been graduated, many of whom have attained to positions of usefulness and honor; while a large number of others have been in attendance from one to four years, reaping substantial benefits in mental training and in the acquisition of knowledge, and becoming important factors in promoting the intellectual, moral, and material growth of the Commonwealth.

It is freely admitted that, although important branches of learning related to agriculture and the mechanic arts, have been taught from year to year at the University, but little has yet been done towards applying the principles of science to the solution of the practical problems involved in the successful cultivation of the soil, or in the development of the mechanic arts; but it is also true that the failure to develop fully the practical features, is due to the inadequacy of the legislative appropriations to justify instruction in these departments on a scale commensurate with the wants of the youth of the State; and yet I have been informed by a gentleman who was a member of the Board of Trustees for eight or ten years, that not a session of the legislature has been held since the organization of the University, during which an application was not made to that body for a special appropriation to effect these objects.

It may be that prior to 1885, the condition of the finances of the State did not justify the expenditure of the sums necessary to give these expensive kinds of training, but with a surplus of more than half a million of dollars in the treasury of the State, in January of that year, it was certainly a time when the \$25,000 asked for by the Board of Trustees for the agricultural and mechanical departments, ought not to have been withheld.

An examination of the Acts of the General Assembly since March 27th, 1871, the date of the incorporation of the University, will show that the entire amount appropriated to the institution has been \$208,111; \$111,386.76 of which, was expended for site, buildings and appliances, and the balance, \$96,724.34, for current expenses. Dividing the first and last of these sums by fifteen, the number of years the institution has been in operation, and we find \$13,874 to have been the average yearly appropriation by the State for all purposes, and \$6,448 the average yearly appropriation for current expenses.

In comparison with what other States are doing for higher education, these are small sums. We need not go to the rich and populous States of the north for an example to emulate. Mississippi supports four State schools; her University at Oxford, an agricultural college for the whites, another for the blacks, and an industrial college for women.

And, according to a recent statement of the Auditor of State, the following sums were paid out of the Treasury to these schools from 1880 to 1886, inclusive, viz:

To the University at Oxford.....	\$239,001 00
To Alcorn University at Rodney.....	74,281 72
To the Agricultural and Mechanical College at Stark- ville	342,827 19
To the State Industrial Female Institute at Columbus, from 1884 to 1886.....	69,928 75
Total.....	<hr/> \$726,038 66

Showing that during the period of seven years above referred to, Mississippi paid out *annually* for higher education, \$103,719.80.*

The State of Arkansas can most economically supply the needs of her youth in higher education by concentrating her means upon one institution where all departments of instruction, theoretical and practical, shall be taught. This she has pledged her faith to do at Fayetteville, but the facts I have recited, show that the investment she has made is inadequate to the undertaking. Let the General Assembly but add \$100,000 in arable land, buildings, stock, farming implements, machinery and other needed appliances, and appropriate biennially from sixty to eighty thousand dollars for current expenses, and the good results will soon be manifest in the greater impulse given to thought and effort throughout the State and in the more rapid development of every industry.

Having made this ^{an extract from} brief statement of the aims and history of the University, I proceed to give my official report of June, 1885, and the most important parts of that of June, 1886, with such changes and additions as the experience and thought of the past six months have suggested.

In the first of these reports the following recommendations were made with a view to a practical solution of existing difficulties:

“In the present circumstances, it seems to me that your honorable body should consider:

1. In what respects the aims of the University fail to meet the requirements of law, State and Federal.
2. Have we the means at command to carry out all these requirements?
3. What changes should be made in the courses and chairs of the University to effect these ends?
4. What changes are required in its corps of teachers to insure the efficient carrying out of the modified system?

My views on the first two propositions are briefly as follows:

That whether the Federal or State laws under which we are acting in the management of the Arkansas Industrial University, make it mandatory that we should teach agriculture and the

mechanic arts practically, the one on the farm and the other in the shop, experience has shown the necessity of this practical teaching to accomplish the best results, and that those of the Land Grant schools which unite the practice with the theory have had the largest number of students and are doing the most good. I am aware that we cannot more than make a beginning in affording facilities for practical instruction in these departments without a special legislative appropriation for the purpose; yet, I am convinced that the best interests of the University require that this beginning should be made with the means at command.

I propose, first, the appropriation of \$5000 from the annuity of the ensuing year for this purpose, \$3000 to be expended for appliances for the Mechanical Department, \$1500 to be expended in initial preparations for conducting an experiment station, and \$500 to be expended in appliances for the manual training of the girls in domestic work and what is called industrial art work.

I propose the revival of the Normal Department by the appointment of a first-class teacher who understands not only the best methods of school organization, discipline and instruction as applied to the public school system, but illustrates in his own teaching all that he teaches; who can successfully co-ordinate the Normal to the ~~to the~~ Preparatory Department, and whose efforts in vacation will commend his department to the teachers of the State.

Of all the educational wants of Arkansas that of good teachers is the most prominent and the most necessary to be supplied for the building up of an effective public school system.

Let us make another effort to meet this want, and we will not only be carrying out an imperative requirement of law, but working in a direction which promises the earliest fruits of blessing to the youth of the State.

3. I propose a business course of two years, to meet the wants of those who wish to prepare themselves for commercial pursuits. This course may be co-ordinate to others without additional teachers, for reference can be had in the choice of new teachers, to their ability to teach book-keeping and other branches embraced in commer-

cial science. Such a course, I am persuaded, would be both popular and useful.

If the propositions I have made be adopted I believe that an important step will be taken towards meeting both the requirements of law and the needs of Arkansas, in the present stage of the development of her educational agencies.

If we do what we can to effect these ends we shall be conscious of endeavoring to discharge our full duty, whether we satisfy the public demand or not; but I shall be greatly disappointed if the new measures do not result in an increased interest in the work of the University as well as in enlarging its usefulness and in increasing its efficiency."

These views were fully endorsed by your honorable body and the following appropriations were made from the annuity to put the measures recommended into practical operation, viz: \$1000 for fitting up and furnishing a new laboratory, \$500 for farm and grounds, \$2500 for fitting up rooms and purchasing machinery, tools, and material for a work shop in which to teach the boys wood and iron work, \$500 for furnishing an industrial department for the girls, \$1600 for employing a superintendent of work shop, and a teacher of drawing and industrial art work for girls, and \$1500 for a normal professor.

The results of this investment upon the work of the following session will be discussed in their proper chronological order.

In compliance with the joint resolution of the General Assembly requiring a re-organization of the faculty and a reduction in the number of the collegiate professors, the Board of Trustees declared all positions vacant, re-organized the departments of instruction so as to reduce the number of professors from nine to seven, and adjourned to meet on the third of July to select professors and assistant professors to occupy the new positions.

From the care exercised by the Board of Trustees in the choice of the new Faculty, it was to be expected that but few, if any mistakes would be made, and I am glad to be able to say that both the board and the people of the State have special reason to be con-

gratulated upon the selection of instructors of so great worth, so earnest, so laborious, so conscientious, so nearly harmonious in their work, and so fully equal to every task and emergency.

All the appointees reported promptly for duty by the first day of the session, two of the heads of departments, Professors Purinton and Whitham, having spent several weeks prior to that time, in fitting up their laboratories and lecture rooms for the work of the year. It was no small task for the President to introduce an entire corps of strange teachers to their multiform duties under a system to which some of them had been unaccustomed, but this heavy labor had its full compensation in the pleasure realized in witnessing the spirit of harmony that prevailed, and the willingness of each one to assume his full share of the work to be performed. The reduction of the number of full professors made it impossible to provide for the instruction of all the classes so as to give to each the time and study requisite for the attainment of the best results. But, excepting this drawback to the work of the session (1885-6), it has been characterized by strength and efficiency, and presents elements of encouragement to look forward to a steady development of the University in all its departments.

The limits of this report will not allow of my embracing the special reports of the professors, of the work done in their several departments. It would appear from even a cursory examination of these reports, that each professor has done a great deal of work, while some have been employed almost every available hour of every working day, none having had thought of the number of hours they should be employed but only of the work to be done.

A brief reference to some of these departments must suffice, while those which form the basis for technical courses, call for fuller discussion in view of the special interest felt, at this time, in their development.

PSYCHOLOGY AND ETHICS.

This department is taught by the President.

The aim is to lead the student to investigate the modes of mental action, to classify the facts observed, and to ascertain the powers and

susceptibilities of the mind and the laws of its growth by a philosophical induction from the facts of consciousness. He is taught to accept no statement as true until he has subjected it to the test of his own experience, and is encouraged to discuss freely opposing opinions.

The Senior Class received instruction daily for the first two terms of the session and twice a day for no inconsiderable portion of the last term.

The Business Class has received instruction three times a week during the last term.

MATHEMATICS AND LOGIC.

E. H. Murfee, L. L. D., Professor.

The work of this professor has been characterized by faithful persevering efforts to accomplish what is required of each class in the various curricula of the University, and at the same time by the exercise of excellent judgment in selecting and presenting the most essential matter possible of accomplishment. The aim seemed to be to make the teaching in both departments as efficient means of mental discipline as well as a source of valuable information. Some of the classes had much back work to make up, which rendered the task the more difficult, but through the able management of the Professor, the most satisfactory results were accomplished.

Besides teaching the whole course of mathematics from Algebra to Calculus and Logic, the Professor has taught political economy to both the Senior and Business Classes, and has not unfrequently performed executive functions when the President was temporarily absent on other duty.

ANCIENT LANGUAGES AND ANCIENT HISTORY.

R. H. Willis, A. M., Professor.

The work of this Professor has been characterized by thoroughness, painstaking and research, and has been fully equal to the standard laid down for training in the classics. The aim has been not only to give the student facility in translation, but a thorough

acquaintance with the grammar and idioms of the languages taught, and a valuable summary of Greek and Roman History. Many of the students of this department have done a great deal of hard work and have made commendable progress.

ENGLISH, FRENCH, GERMAN AND MODERN HISTORY.

Howard Edwards, A. M., Professor.

The efforts of this Professor have been characterized by an ease and a readiness in presenting a wide range of subjects, each calling for extensive study and research, which has secured the interest of his classes without overburdening them. The work of the year has demonstrated the superior value of what is known as the "natural method" of teaching the modern languages, where a ready use of them is desired, rather than a critical knowledge of their structure and philology.

The teaching of our own language and literature is comprehensive and strong, and it is believed will develop into a feature of special attraction to those youth who wish a thorough acquaintance with the mother tongue and its masterpieces of literature.

The work of this Department is too heavy for one man, and it is earnestly recommended that the Chair be divided, or that a competent assistant be employed as soon as the requisite means is supplied.

APPLIED MATHEMATICS AND TACTICS.

J. M. Whitham, A. M., Professor.

This Department embraces Physics, Astronomy, Engineering and Infantry Tactics.

The head of this Chair has shown ability and energy, both in and out of the class room. His first work was to gather together the appliances of his Department and to order such additional apparatus and supplies for the Physical Laboratory as the limited appropriation (\$400) made by the Board of Trustees would warrant.

I am glad to report that he made the best possible use of the money placed at his disposal in supplying the needs of his Depart-

ment, and that the facilities for illustration therein have been very much improved, though they are far short of what they should be.

The Freshman and Sophomore classes have been taught Physics for the entire session. The Professor reports that with the aid of the new apparatus he has been enabled to illustrate nearly every principle discussed in the class room, while the Sophomore class, with some assistance from Prof. Tompkins, Superintendent of Shops, have added several pieces of apparatus to the collection—thereby saving the University an appreciable sum. The Senior class was taught Astronomy for one term. The apparatus in use in this Department is not so complete as that in Physics, though a telescope of very fair magnifying power and a few other appliances are in use,—a valuable nucleus for a larger collection which it is hoped will soon be added.

The Engineering course promises to be a popular and an efficient one. During the session there have been two Juniors, three Sophomores and nine Freshmen taught in this department. Besides learning the theory of what was taught, the students of the first two of these classes have had much practical instruction in the field, while all have had daily instruction in Mechanical and Engineering Drawing—a most necessary part of an Engineer's training.

Your attention is called to specimen's of drawings by these students, to be found in the lecture room of this department, showing a character of work, alike creditable to both professor and pupils. The modifications of the course of Civil Engineering proposed by the Faculty, are deemed such as will make it fully equal to similar courses in some of the best of the older institutions.

A complete course of Mechanical Engineering, herewith submitted, is deemed a desideratum to enable our University to turn out a class of men capable of conducting to success enterprises which require the application of the principles of science to the construction and use of machines, for which there is an ever increasing demand in the industries of life.

A similar course of Mining Engineering is perhaps quite as much demanded in view of the vast mineral resources of the State,

and the scarcity of men capable of applying the principles of science to the uncovering and treatment of this hidden wealth in the most profitable manner.

It is a question of doubt, with the Faculty, however, whether with the limited number of scientific professors, we are justified in adding this course to the curricula of the University, at present, but they would urge that this important step be taken as soon as the means is supplied for additional instruction in this department. It is respectfully submitted for the consideration of the Board of Trustees, whether it would not be wise to supply the instruction and appliances requisite for the fullest development of the three departments of engineering, thus making our University a special School of Engineering, adequate to the wants of our State.

The instruction given in tactics will be referred to, further on, in connection with the Military Department.

CHEMISTRY, MINERALOGY, GEOLOGY AND BIOLOGY.

Geo. D. Purinton, A. M., Professor.

In the management of his department this professor has shown versatility and energy with a quick perception of what may best be attempted with given means.

His first work was to take an inventory of the apparatus and supplies of the Chemical and Biological departments, and to purchase such additional apparatus and material as he deemed essential to efficient work in each. The sum of \$1,000, appropriated to this department by the Board of Trustees, was judiciously expended in making these purchases and in fitting up a new laboratory in a suite of rooms on the third floor of the main building, which, upon consultation with your Executive Committee, were set apart for the purpose. This outlay upon the laboratory, supplied valuable apparatus both for illustrating general chemistry and biology, and for analyzing soils and fertilizers, to lay a true scientific basis for successful agricultural experimentation.

His next work was to remove the State minerals from the room adjoining the library to the museum on the third floor, thus uniting

the mineral and biological collections of the University, which for reasons unsatisfactory to me, had before been kept separate.

At my request, he examined the collections of minerals and plants belonging to Prof. H. L. Harvey, and finding these valuable, he recommended their purchase, which was soon after authorized by your Executive Committee. The amount of money paid for this collection (\$600), was, in my opinion, well spent, for the specimens were chiefly collected in Arkansas, and represent the mineral resources and flora of the State.

The Honorable Board is requested to visit the newly fitted up apartments, and judge for themselves of the wisdom of the changes and purchases made.

The classes taught in this department have been as follows : Sophomore, General Chemistry ; Junior, Analytical Chemistry ; Freshman and Sophomore, Botany, Physiology and Zoology ; Junior, Geology and Mineralogy, and Sub-Fresh, Science—embracing an elementary treatment of Chemistry, Zoology and Geology. The subjects have been illustrated throughout by suitable apparatus, charts, models and specimens from the museum, and by the use of the compound microscope in the examination of vegetables, animal and mineral substances.

The Sophomore Class have accomplished the usual amount in General Chemistry, and, in addition, four months' laboratory practice and preliminary analysis. The Junior Class have studied Mineralogy for one term, the work comprising the study of Crystallography and the determination of over a hundred minerals before the blow-pipe, with a short course in the practical assaying of gold and silver ores. The scientific students of the same class have also spent a part of the year in the study of Analytical Chemistry.

The students of the scientific course of the Freshman and Sophomore classes have pursued the study of Descriptive and Practical Botany during the Spring Term, with satisfactory results, having analyzed sixty-five plants as a part of the regular class work, and besides, prepared and deposited in the museum, fifteen well preserved and classified plants each.

The same students have spent six months in the profitable study of Physiology and Zoology. Besides the regular instruction in this study, a small class in Taxidermy was taught out of school hours. In the practical instruction of these classes, the Professor clas-ified, stuffed, mounted and placed in the museum more than fifty birds and mammals, free of cost to the University. The class in Taxidermy, also, furnished for preservation some creditable specimens of their work in the practice of this art.

Regret is expressed by the head of this department that owing to the multitude of his other duties he could not give to his geology class practical instruction through a series of field excursions, which he regards as most necessary to the best results.

AGRICULTURAL DEPARTMENT.

I have already referred to the determination of the Board of Trustees to make a beginning towards the development of this department, notwithstanding their failure to secure a special appropriation for the purpose; and of their setting apart \$1500 for the laboratory and farm as an initial step in that direction. Professor Purinton eagerly expressed an interest in the scheme and a willingness to begin experimentation on a small scale, if desired.

To promote this object, he analyzed a number of commercial fertilizers, offered in the markets of the South, and tabulated the results for publication. In the meantime he opened up a correspondence with the Agricultural Department at Washington and with several practical horticulturalists with the view of securing all available co-operation and aid.

Mr. Gill, of Springdale, Washington county, one of the most enterprising nurserymen in Arkansas, generously offered to supply the University, gratis, with the various fruit trees and varieties of small fruits suited to our climate; and the professor went up to Springdale and selected more than 400 fruit trees, embracing sixty or seventy varieties of pear, peach, apple, cherry and almond trees, and specimens of several of the best varieties of small fruits, and had them all planted in the most careful manner in ground which had been properly prepared to receive them.

In addition to this he had plots of ground laid out for experimentation in oats and corn, applied to them fertilizers of known value, had the ground prepared and planted and took careful notes of the weight and character of the fertilizer applied to each plot, and of the treatment to which the soil was subjected.

He proposes to analyze samples of the soils, also, so as to be able to study the scientific problems involved in his experimentation and make reliable deductions therefrom for the benefit of the students as well as of the farmers of the State. Reports of these experiments will be published from time to time, in bulletins designed for distribution. Copies of the first two of these bulletins are herewith submitted for your examination. It is hoped that they will lead the public to see the practical character of the work which it is proposed to do in this department if the requisite means is supplied.

Of course, what has been done is but a beginning; but I feel assured that the Board of Trustees will be sufficiently encouraged thereby to make an effort to secure from the next Legislature an adequate sum to inaugurate experimentation on a scale that will be fruitful of greater results, and place our Agricultural Department in favorable comparison with the same Department in similar Colleges and Universities in our country.

I call attention to the fact that I have urged our Senators and Representatives in Congress to do their utmost to secure the passage of what is known as the "Hatch Experiment Station Bill" which provides for the appropriation of an annuity of \$15,000 to each of the Land Grant colleges for agricultural experimentation alone. Should this bill pass Congress the University will not be wholly dependent on the State Legislature for the funds to make this department a success. But it would not be wise to depend upon this contingency for building up our agricultural department. The State should provide liberally for the wants of the department without reference to Federal aid.

A handsome sum is now needed for purchasing additional land and for clearing and fencing those portions of the wooded tract now owned by the University as are capable of cultivation, for building

a barn with sheds and ricks for stock, and for the storage of grain, hay and agricultural implements; for the purchase of work animals and of fine stock for breeding purposes, for putting up a dairy, for planting a nursery, and for other purposes. Twenty thousand dollars would be a moderate sum to ask from our next legislature for these purposes.

It should be our aim to profit by the mistakes of older agricultural colleges, to attempt only what we can feasibly carry out, and to practice great economy in our purchases and operations.

There is another thing necessary to the success of agricultural teaching and experimentation, to which your attention is called. To give the students sufficient practice in planting and cultivating the principal crops, in caring for stock, in dairying, and in practical horticulture, it is deemed necessary by those who are acquainted with the best results achieved, that they should work at least three hours per diem. Of course, some of the work to be done is instructional, the teacher going out with his class and giving practical lessons in the field, but much of it is of the kind which may be done by farm laborers of ordinary intelligence. Labor of the latter kind should be paid for at so much an hour, and to meet this want a special appropriation is needed.

It is true that experience teaches that student labor is less profitable than the labor of experienced farm hands; but the State can well afford to lose in the quantity and quality of the work done by students, in view of the greater benefits it will derive from their thorough training in the science and art of agriculture, which statistics show must be the employment of four-fifths of its population. Besides, in no other way can the State do so much for its indigent youth.

By educating their minds along the line of their muscles, in this and other ways, it will benefit a larger percentage than is possible by any other educational method; while it will, at the same time, make them capable of rendering a fourfold return for every dollar expended upon them.

An appropriation of \$5,000 for student labor for the next two years would not be too great a sum to be expended in this way.

In 1884-5, the Mississippi Agricultural College, at Starkville, paid out \$10,199.66 for student labor alone.

Heretofore but few students have taken the agricultural course simply because instruction in the department has been altogether theoretical. With the thorough equipment I propose for it, and sufficient money to pay for the labor required of students, by which young men of limited means can pay the whole or the greater part of their expenses by their work, it will not be long before this will become one of the most popular departments of the University.

Your attention is called to the fact that no man, however able, can teach all the branches of science, now embraced in Professor Purinton's department, and do full justice to himself or to the pupils. The department should be divided into two chairs—chemistry and agriculture being included in one, and geology, mineralogy and biology in the other.

NORMAL DEPARTMENT.

J. F. Howell, A. M., Professor.

This department, instruction in which was practically suspended during the session of 1884-5, was re-organized through the legislation of the Honorable Board, in June, 1885, and has been conducted during the past session with commendable zeal and efficiency by the professor in charge, with promise of excellent results.

It was a matter of surprise to me when I assumed the executive duties of the University two years ago, to hear it said that it had been difficult to co-ordinate the Normal Department to the other departments of the University. I saw no reason why the Normal students might not recite with the students of the same grade in the general courses, so far as their studies were the same, and at other periods of the day receive instruction in the theory and practice of teaching from the Normal Professor. But to insure the easier solution of the problem, I proposed that the Normal Professor be made *ex-officio* principal of the Preparatory Department. The arrangement has worked well this year, but it is not deemed advisable that it should be continued.

1. Because the new schemes of classes proposed by the Faculty insure the perfect co-ordination of the Normal with the other departments, in future.

2. Because it will be too much to expect the Normal Professor to develop his department to the extent that the interests of the State demand, and in addition, to supervise a Preparatory Department of two hundred and fifty or more students.

The prospect of building up a large and efficient Normal Department is quite encouraging. The department is popular. The number of pupils taught during the session has been thirty-five--fifteen collegians and twenty preparatory students. The collegians have recited three times a week, and the preparatory students daily. The former have studied Hewitt's work on Pedagogy, and Parker's Talks on Teaching; the latter have studied the first of these books and Kellogg's School Management. The Professor has supplemented the regular lessons with informal lectures in amplification of the treatment of the topics embraced in the text books.

Besides the students who have received technical instruction in this department, there have been others in the two lower Preparatory classes who propose to take a Normal course as soon as they become sufficiently advanced to do the work required. So that there will probably be four distinct Normal classes next session, embracing an appreciably larger number of students.

It is recommended that the department receive the especial fostering care of the Board of Trustees. An appropriation of \$100 should be made at once for the purchase of needed appliances for illustration, which should be added to from year to year as the wants of the department may require.

The professor of the department calls attention to the want of a model school of children to afford the Normal students the requisite practice in applying the principles and methods they learn, in teaching classes, under his supervision. This want may possibly be supplied through an arrangement with the Directors of the Fayetteville Graded School, to have the students of the two higher Normal classes of the University to teach an hour or two per diem in the

different grades of that school. During the past session, the Professor has substituted for the model school, systematic class practice, in which each pupil has been required to teach the balance of his class, under the eye of the instructor, and subject to the criticism of both the instructor and the class. It is believed that this plan has been productive of good results, though it lacks some of the conditions supplied by the model school.

PREPARATORY DEPARTMENT.

This department of the University seems to be a necessity in the present condition of primary and secondary education in the State. Until the Public School system shall have been so fully developed as to afford one or more schools in every county of the State, capable of preparing young men and women for the Freshman class, the University will be compelled to maintain efficient preparatory instruction to furnish material for its classes.

Recognizing the proper organization and efficient management of this department to be essential to the best interests of the University, your Honorable Body passed a resolution in June, 1884, making it my duty to exercise a close supervision over its work, and to inaugurate such changes as might be deemed important to be made. During the first year of my administration, I spent no small share of my time in endeavoring to discharge this duty, and believe that my efforts resulted in a more satisfactory classification of the students, in making the examination a more reliable test of their standing, in rendering the promotions from class to class more rapid, and in securing more systematic methods and better order.

In September, 1885, Prof. J. F. Howell became ex-officio Principal of the department, and has worked in harmony with me in every effort to promote its efficiency. The Professor has given the department as much supervision as possible for one having so many entrance examinations to conduct and so many classes to teach, while he has kept the records and made the reports required by the regulations in a most satisfactory manner.

He has had five assistants in this department—Messrs. G. W. Macon, A. F. Lewis and J. B. Greene, and Misses E. C. Weimer

and R. Moss, all graduates of first class institutions and teachers of exceptional ability and worth. Both the teaching and the discipline of the department have been excellent, reflecting credit upon both Principal and Assistants.

The courses of study and schemes of recitation of the department have been carefully revised by the Faculty, and it is believed that it will be easier to conduct it in future.

It is suggested that whenever it is possible to separate the two higher from the two lower classes, and remove the B and C classes to another room, or, better still, to another building, the change should be made, both because of the greater dignity that would attach to the A and Sub-Fresh classes by having them regarded as the high school department, and because the separation would make it feasible to subject the B and C classes to different methods of discipline from those employed with older and more advanced students.

When the district schools of the State shall have become more efficient, I shall recommend that the two lower classes be abolished.

BUSINESS COURSE.

This is a two years' course, and embraces the English, Mathematics, Elementary Natural Science and History of the A and Sub-Fresh classes, with Book-keeping, Penmanship, Commercial Law and Lectures on Political Economy and Ethics.

The aim is to make the technical instruction in this course as complete as that taught in the best business colleges of the cities, and along with it to give a thorough training in the essential branches of an English education, thus enabling us to turn out business graduates of broader development and wider scope of knowledge than those institutions attempt to do.

During the session, more than twenty young men have received instruction in this course, nine of whom are recommended for graduation.

I recommend that a hall be fitted up for special use in giving instruction in Penmanship, Book-keeping and Commercial forms.

It should be supplied with tall desks like those used in counting rooms, at which the student can stand and do his work; a model bank provided with all appliances used in banking establishments, and other necessary furniture and conveniences for teaching the various business transactions of every day life.

It is probable that \$300 would be a sufficient sum to supply what is needed to accomplish the end proposed.

INDUSTRIAL ART DEPARTMENT.

In organizing this department, the principle was recognized that drawing must be at the foundation of all efforts to promote the Industrial Arts to say nothing of its value as an educational instrument. All the students, except the Seniors, were, therefore required to take lessons in free-hand drawing. At first, not a few of them regarded the study as a useless waste of time; but later, much more interest was manifested, and throughout the session there has been constant progress in the department, and in many cases the results have been highly encouraging.

You are invited to examine the specimens of the drawings of the different classes displayed in the Art Hall. Many of the designs are original, and reflect credit upon both pupils and teacher. Miss Hall, who has charge of this department, is a graduate of Syracuse University, New York, and has shown herself to be highly competent both as a teacher of drawing and of Industrial Art work for girls. Besides teaching both sexes Free Hand Drawing, she has taught the girls needle work of various kinds, using her own and printed designs of the work to be done. Much difficulty was experienced, at first, in inducing the girls to undertake just what was suited to their ages and stage of advancement, the tendency on their part being to attempt the more complex and difficult work; but through persistent effort, the teacher succeeded in carrying the students through a graded system of work with satisfactory results.

Specimens of the work done will be found displayed in Art Hall, and you are invited to give them careful examination.

The expense of this department for the entire session has been only \$104.16, leaving a balance of nearly \$400 of the money appropriated for the purpose by the Board of Trustees to be covered into the treasury.

Next session, it is proposed to teach the girls brass work and wood carving. The outlay necessary for tools will be about \$350, and \$150 additional will be needed to purchase material and to meet the expenses incident to a year's work.

Should our next Legislature make a liberal appropriation to the Industrial Department, I shall recommend that both girls and boys be taught type-writing, stenography, photography, printing and telegraphy—arts, any one of which, if thoroughly learned, would enable them to earn a comfortable living, if necessary, a most desirable thing, in view of the fact that few can hope to achieve success in the higher intellectual pursuits. Each pupil might be allowed to choose one or more of these and other arts.

The Boys' Industrial Department has assumed greater proportions. The appropriation of the Board for equipping this department was \$2,500. It was proposed to fit up one or more rooms in the basement of the main building with the machinery and other tools necessary for giving instruction in wood and iron work, to a limited extent, at least.

Your Committee on Manual Labor went so far, during the summer as to purchase the flooring necessary for the rooms, but before beginning the work, applied to the Insurance Companies, whose policies cover the building to the amount of \$75,000, for their consent to our locating the shops as proposed. They refused to consent unless the University would pay additional premiums to the amount of five or six hundred dollars, which we were unable to do. After considerable delay in the effort to overcome their objections, the matter was referred to the Executive Committee, who gave their consent to our fitting up the old storage house, south of the Refectory, for a work shop. This building was a mere shell, hardly water proof, but after being ceiled and otherwise repaired and having an addition built to it, to accomodate the boiler and forge, was pretty well adapted to our purpose, though much smaller.

than we would have desired. With the aid of Professor Tompkins, who was elected Superintendent of the shops, about the 1st of October, and after considerable correspondence, the most essential machines and tools were purchased from a reliable firm in Baltimore, while a twelve-horse-power engine with boiler was selected and bought through an agent in Fayetteville.

Owing to the extreme cold weather of January and February, and the delays in the reception of the shafting and machinery, the shop was not ready for use until the Ninth of March, on which day it was formally opened by the President of the University, who made a short speech to the students, setting forth the value of Industrial Education and referring to its rapid growth and increasing popularity both in our own country and in Europe. On that day the Junior, Sophomore and Freshman classes received their first lessons in this department, and have been instructed therein three times a week ever since.

The time they have devoted to the shop has been too short to allow of any appreciable show of work for your inspection. The most that they have done has been to acquire a partial acquaintance with the use of tools and machines, and some insight into a few initial processes which underly the best mechanic art work in wood and iron, but it has been sufficient to show that it is feasible to co-ordinate this practical training with the scientific and literary work of the University with promise of good results.

I recommend to your honorable body that manual training of some kind be required of all students, male and female. I shall not enter upon an elaborate argument in support of this recommendation but simply state that I believe no education to be complete which does not embrace the training of the whole man, mind and body. It matters not that a parent propose an intellectual pursuit for his son. There is no vocation so high that it may not be followed with greater success if the individual be trained to exercise his hands and muscles upon the material objects around him, and to learn *to do* as well as *direct how to do* what will contribute to his material comfort and the growth of the industries of life. The signs of the times point to a re-organization of our schools of all

grades to include manual training, and the success that has attended those schools which have adopted this feature argues strongly for the increased power which the co-ordinate development of mind and muscle will exert in the civilization of the future. It must be through our schools that the mental power, intelligence and skill shall be supplied, which will be adequate to the development of the sources of wealth that abound in our State.

The Arkansas Industrial University, as indeed, our entire school system, is yet in its formative state. There is a spirit of progress along our thoroughfares, and an increasing faith in the possibilities of Arkansas, as its resources are compared with those of other states. Let us who are entrusted with the formulation of the agencies for training its youth endeavor to come up to the full measure of our responsibility, by so shaping them as to avoid the errors of the past, while we learn the lessons of the present, in choosing the most natural and effective methods of utilizing every talent and potentiality of which the youth of the State are possessed, to prepare them to contribute to its development, in all that constitutes a great, a prosperous and a noble commonwealth.

In closing this paragraph on Industrial Training, I respectfully suggest that if the funds at your disposal will not warrant providing at once for the manual training of all the lower classes, to endeavor to extend the benefits of the department to the Sub-Fresh and A classes. To accomplish this, an appropriation of about \$2300 will suffice, to be expended as follows: \$1500 for building an annex to the shop and supplying additional tools and machines to enable the instructor to teach twenty-five pupils at one time; \$500 for material and coal, and \$300 for an engineer and assistant at the forge. But to supply what is needed for building and equipping a complete manual training establishment, a legislative appropriation of \$20,000 will be requisite, and not less than \$12,000 of this, should be asked for next winter.

It affords me pleasure to commend to your favorable regard Mr. Stonewall Tompkins, the Superintendent of Shops. He is a graduate of Miller Manual Training School of Virginia, and is a

young man of skill, good judgment, and conscientious devotion to duty.

MUSIC DEPARTMENT.

This department is in charge of Miss Kate V. King, a gifted musician, an excellent teacher and a hard worker. It is the only department in which the beneficiary and Normal appointees are not taught free of charge. The teacher is chiefly sustained by tuition fees, but the University pays her a small salary (\$200) for service at Chapel and on public occasions, and furnishes the instruments and the necessary rooms for use in giving lessons and in practice.

This method of conducting the department does not entail a heavy tax upon the University, but I respectfully submit whether the public interests would not be more fully subserved by putting this upon the same basis as other departments, except as to tuition, for which moderate fees should be charged to all alike.

All departments should be under one management and responsible to one head, to secure the best results. To this end, the Music Department should be fully co-ordinated to the other departments by holding the teacher to the same responsibility as other teachers for faithful instruction and management and for the enforcement of discipline; and by requiring the music pupils to conform to all the regulations that apply to academic students. The teacher should receive a stated salary for so many hours' work, and when unable to teach all who apply for instruction, an assistant should be employed to be paid in like manner. The pupils should be regularly matriculated and required to pay their fees to the Regent, and a reasonable fee should be charged for the use of the instruments, which should be kept in good repair at the expense of the Institution.

MILITARY DEPARTMENT.

Though the President is the head of this department and exercises the general functions of administration and control which devolve upon a commanding officer, the Commandant is charged with the details of the department and is responsible to the President for the efficiency of both drill and discipline. •

I am glad to report that the new Commandant, Prof. J. M. Whitham, has discharged the duties of his office in a satisfactory manner. Having been educated at the United States Naval Academy, he is well acquainted with military science and tactics, while his interest in field movements has not been dulled by the hard experience of war. His training has also given him those exact ideas of order and discipline, so essential to success in a military officer. The corps of cadets has been practiced in the school of the soldier, company and battalion, and in skirmish drill, while the officers have besides received theoretical instruction in tactics at stated intervals.

It is believed that substantial benefits have been realized by the majority of the students from this training.

To enable the corps to be efficiently drilled in all kinds of weather it is recommended that a suitable building be erected for the use of this department. It should contain a capacious drill-hall with an armory for small arms and equipments, and another for artillery. The drill-hall could also be used for athletic sports which the Faculty are disposed to encourage.

I have pursued a more lenient course this session than last in this department, in regard both to attendance and to the wearing of uniforms. We have had a large percentage of poor students, some of whom have had to work hard out of school hours for their board. I have excused students of this class from drill when they were closely pressed for time, and no one has been compelled to leave the institution because of his inability to purchase a uniform.

It is extremely difficult to conduct this department without the aid of a surgeon, and I trust that when dormitories are provided for the students, this want will be supplied. Until then I suppose I shall have to listen from day to day to applications to be excused from military duty, and endeavor to make a common-sense diagnosis of ordinary cases of physical disability.

I am glad to report that Professor Whitham has been in perfect accord with me in the management of this department and in the administration of discipline; but in view of the fact that his pro-

professional duties are already ^{so} efficiently onerous, I trust that we may soon be able to secure the detail of an army officer to assume the duties of Commandant.

At the request of your Honorable Body I have already carried on quite a correspondence in the effort to accomplish this end, but it has so far been fruitless of results. It is to be hoped that the obstacles in the way may soon be removed and that an officer, in every way suitable for the position, may be assigned to duty at the University for the ensuing four years.

In this connection I respectfully suggest the propriety of having the University made a government meteorological and signal station.

A few years ago meteorological observations were taken here by one of the professors in the Scientific Department, but for some cause the instruments were withdrawn by the government. I have reason to believe that there would be but little difficulty attending an effort to secure both the instruments and a trained observer, with no further cost to the University than that of furnishing the requisite facilities for taking the observations.

COURSES OF STUDY,

In July, 1885, the curriculum of study were re-arranged to include four technical and three general courses, the former embracing an agricultural, a normal, an engineering and a business course; and the latter an English, a general science and a language course, with a preparatory course designed to give the needed training for the higher work.

The experience of the past year has suggested still further modifications which are submitted to your Honorable Body for adoption. As now arranged, a course of Mechanical Engineering has been added to the four technical courses already mentioned; and the general courses comprise a General Science course and three Language courses, designed to meet more fully the varied demands for general culture.

It is believed that these courses are well adapted to the ends proposed, and will compare favorably with similar courses in the best institutions in the older states.

The Faculty has also outlined a series of Post Graduate courses, designed to meet the wants of graduates of this and other institutions, or persons of equal attainments, who may desire to make themselves specialists in certain departments of science or literature; all of which are herewith submitted and respectfully recommended for your adoption.

OBSTACLES TO THE SUCCESS OF THE UNIVERSITY.

In my official report of 1884-5, several obstacles to the success of the University were discussed and remedies suggested therefor. I shall briefly refer to but two of the most important of these obstacles.

The first, tends alike to prevent a large number of youth from attending the University, and to cause those who come to grow restless and withdraw before they have derived substantial benefit. I refer to the want of an efficient system of schools from the Primary to the High School grade, in every County of the State.

While encouraging progress has been made in Arkansas, in the past four years, under the able management of Superintendent Thompson, in promoting the efficiency of the district schools, it will be readily conceded, that in the majority of them the training is poor, while but a beginning has been made in a few of the counties of the State, in maintaining Grammar and High Schools, capable of preparing youth for the University classes.

Until the standard of primary and secondary education can be appreciably raised, it is obvious that a large number of our youth will neither be sufficiently trained to discover their own mental capacity for higher training, nor to place an intelligent estimate upon the knowledge and power which such training may give.

A large percentage of those who attend the University are too poorly prepared to enter the College Department, many of them having gone to school but a few months in their lives, and being

barely able to enter the lowest Preparatory class. Some of these persevere until they graduate, but the majority drop out discouraged at the long road they have to travel to attain a degree, or because they are unable to incur the expense of a six or eight year's course away from home. It is the province of the Honorable Superintendent of Public Instruction, rather than myself, to suggest such measures—fiscal and administrative, as will remove this obstacle that so seriously impedes the growth and efficiency of the University and retards the progress of our State.

The importance of building up a graded system of public schools from the district school to the University, whose teachings are wisely adopted to prepare youth for the varied employments of life and for the duties of citizenship, will not be questioned by those who have studied the conditions of national progress in the age in which we live.

I earnestly hope that the Honorable Legislature, soon to meet, will give to this subject the attention its importance demands, and will mature and enact such amendments to our school laws as will give to Arkansas a system of schools equal in efficiency to the best in the Union.

The second of these obstacles to the success of the University is the financial inability of many Arkansas youths to meet the average expense of college training.

The charges for board, books and furnishing goods at Fayetteville are not so high as in many other college towns, still they are higher than many of our youth are able to pay. To overcome this obstacle in part, at least, it is a matter of the first importance to supply cheaper board to both sexes, and opportunities to labor when out of school, to those who are dependent upon their own exertions to pay their expenses.

I strongly urged the necessity of this before the joint committee of the Legislature which visited the University in February, 1885, and was greatly disappointed when the bill embracing their recommendation to appropriate \$18,000 for building two boarding houses was defeated in the House of Representatives.

Notwithstanding the failure to secure the necessary means to effect this object, the Board of Trustees, in June of that year, authorized the fitting up of the old Refectory for a boys' boarding house and appropriated \$1000 for that purpose. The success attending this experiment was one of the most encouraging features of the past session, the results fully justifying the expenditure made. The house was full during the entire session—accommodating fifty students or more, and the family of Professor Howell, who kindly took the oversight of the establishment at the request of the Faculty. The average cost of good, substantial board was twenty-four cents per diem; and the entire expense of each student, including fuel, lights and washing, varied from \$9 to \$10 per month.

This enabled not a few students of limited means to reap the advantages of the institution, who could not have done so had they been compelled to pay the usual rates of board in private families.

I desire to commend the laborious efforts of Professor Howell to promote the success of this enterprise. Upon him devolved the chief burden of conducting it, and he deserves the thanks of the Board of Trustees for the public benefit he has conferred by assuming this extra labor and responsibility.

The success of this effort to supply cheap board furnishes a strong argument for a sufficient appropriation by the next Legislature for building two large, substantial boarding houses, capable of accommodating the entire corps of students; one for the males and the other for the females.

Besides lessening the expense of living, these boarding houses would be promotive of the greater comfort, health, and of the better discipline and success of the students. It has often been said that the dormitory system of caring for students is not so good as that by which they are scattered throughout the surrounding community where they may enjoy the benefits of society. This depends upon what sort of a dormitory system is provided; what degree of comfort, health, order, mental training and culture it secures to the students; and, also, upon their age and character. I believe that a good dormitory system will secure better results than any other to students between the ages of 14 and 21, while the sys-

tem of boarding out in a town or city is the best where the students are mature young men and women whose habits and character are fully established.

In my opinion, the conditions at the Arkansas Industrial University call for a judicious dormitory system, both because of the mixed character of the students as to sex, age, stage of development and aims, and because the present system has upon fair trial been unsatisfactory in some essential particulars.

To insure the happiest results the professors should have homes on the college grounds, affording opportunities for free intercourse out of school hours, with the youth entrusted to their care, and enabling them to exercise over them every needed supervision.

Under these circumstance, the intellectual, moral and social influence of the Faculty would be brought directly to bear upon the students, tending to stimulate their powers, elevate their purposes, polish their manners, and to promote the development of a vigorous manhood and womanhood.

I therefore, earnestly recommend that the Legislature be asked to make the necessary appropriations to erect on the College grounds two substantial, brick dormitories, with a steward's hall attached to each; one for the males, capable of accomodating not less than two hundred and fifty pupils, and another for the females, capable of accomodating not less than one hundred and fifty pupils; each building to be heated with steam and lighted with gas or electricity, and furnished with bath rooms and other auxiliaries to promote the health and comfort of the pupils; to have an infirmary connected therewith, where the sick may be free from noise and interruption and have the best nursing and medical attention; the two establishments to be under the direct control of the University authorities, and to be so managed as to reduce the expense of board, washing and service to the minimum rates consistent with supplying good, wholesome, abundant fare and whatever else is necessary to secure substantial comfort, cleanliness and the orderly and decent care of youth of both sexes.

I further recommend that eight substantial brick houses be erected for the use of the professors, with due regard to the health,

convenience and comfort of the inmates ; and that both dormitories and professor's houses be so designed, located and built as to unite convenience, comfort, health and artistic effect to the highest degree, and to promote to the fullest extent possible the good of the rising generations of Arkansas youth.

The appropriation required to effect these objects will not be less than sixty thousand dollars ; but I believe the investment to be absolutely essential to the highest success of the University.

ATTENDANCE OF STUDENTS.

The aggregate number of students matriculated in the University, during the session 1884-5, was three hundred and sixty-five (365), against three hundred and sixty-three (363), in 1883-4; three hundred and eight (308) of these entered the Academic Department, twenty-four (24) took Music or Art alone; twenty-four (24) failed to pass the entrance examination and returned home, and nine others left because dissatisfied with their classification. Of the three hundred and eight (308) Academic Students, sixty-seven (67) were enrolled in the Collegiate Department and two hundred and forty one (241) in the Preparatory Department. During the session 1885-6, the aggregate number of matriculates was three hundred and fifty-three (353), three hundred and twelve (312) of whom entered the Academic Department, twenty-six (26) took Music or Art alone, and fifteen (15) failed to pass their entrance examination and returned home. Of the three hundred and twelve (312) Academic Students, sixty-seven (67) were enrolled in the Collegiate Department, and two hundred and forty-five (245) in the Preparatory Department.

From these figures, it appears that the aggregate number of students has varied but little in the past three years. The record of attendance of the last of these years, 1885-6, is the most satisfactory, though the number present was twelve (12) less than that of the year before; for the number of students present in the Academic Department at the close of each month from January to June of that year, was appreciably greater than the number present at the corresponding periods of 1885. For example, the

number of Academic Students present on the 31st of January, 1886, was two hundred and sixty-one (261), while the number present at the close of the same month in 1885, was two hundred and thirty-one (231). At the close of February, 1886, the number present was two hundred and fifty-five (255), against two hundred and twenty-nine (229) in 1885; the number present at the close of March of the same year was two hundred and fifty-five (255) against two hundred and twenty-one (221) in 1885; the number present at the close of April was two hundred and thirty-six (236), against two hundred and eighteen (218) in 1885; the number at the close of May was two hundred and twenty-four (224), against two hundred and eighteen (218) in 1885.

The records further show that the number of Academic Students present at the close of the last three months of the session 1885-6, was greater than at the corresponding periods of the session 1883-4.

It appears, therefore, that while the patronage of the University has not increased, the students of the past session have exhibited less fickleness and restlessness than characterized those of the year before, and of a part, at least of the year before that; from which it may be inferred that the conditions are becoming more and more favorable to persevering effort and effective work at the University.

It is not surprising that the number of students has not increased during the past two years, in view of the period of transition through which the Institution has passed from a state of contention and unrest to one of quiet and progressive effort; but it is confidently believed that the time is at hand when we may reasonably expect an appreciable advance in its patronage, both from the removal of causes of distrust and from a recognition of the efficiency of the work it is doing.

An intelligent public will not be slow to see their interest in patronizing an institution which shall afford every variety of training—general and special, theoretical and practical, suited to supply the varied needs of youth for entering the multiform employments

of life ; especially when it is offered at a moderate cost to all, and for the labor of their hands to those who are willing to work.

The best interests of the State demand that the Institution should have its organization perfected and its facilities for teaching and caring for its pupils, increased as I have indicated in this report ; and I most earnestly urge your Honorable Body to put forth every effort to accomplish these ends.

That the work has been so long delayed, is to be regretted in view of the slower development of the State that the delay has occasioned ; but the conditions are far more favorable to the effort, at present, than they have ever been before.

The Arkansas of today is a different state from the Arkansas of fifteen years ago. Extreme poverty, discouragement, distrust, political disquietude, and the apparent hopelessness of ever extricating the State from its financial embarrassments, have at last given place to thrift, the rapid increase of wealth, business confidence, the faithful execution of just laws, and strong faith in the possibilities of the future. The acknowledged debt of the State is not so large as to give anxious concern, the income from the moderate taxation of the rapidly increasing taxable values being amply sufficient to sustain, liberally, the public institutions of the Commonwealth, pay the necessary expenses of the State Government, and besides, create a sinking fund which, in a very few years, will pay off every dollar of indebtedness.

Let us endeavor to meet the responsibilities and demands of the hour, in the effort to build up a magnificent school, where our sons and daughters may receive every needed training for their life-work, on our own soil, surrounded by the conditions under which they are to live and labor and stimulated by the ambition to become worthy citizens of a state which has proven to be so careful and provident a foster-mother as I would have Arkansas become to her youth.

In closing, I submit my estimate of the appropriations needed for the ensuing two years :

For brick Dormitory and Boarding-house for male students, with Infirmary attached.....	\$ 20,000
For brick Dormitory and Boarding-house for female students, with Infirmary attached, and for the purchase of a beautiful site on the North side of the University, for the same.....	10,000
For heating apparatus for the Dormitories and buildings attached.....	8,000
For furniture for the above buildings.....	5,000
For eight substantial brick dwellings for Professors.....	32,000
For buildings, machines, material and expense of running Mechanical Department for two years.....	12,000
For Industrial Department for girls.....	1,000
For the purchase of land, buildings, appliances and running expenses of Agricultural Department.....	20,000
For student labor.....	5,000
For repairs of Main Building.....	1,000
For book-cases and furniture for Library, cases for minerals and fossils, and furniture for business course.....	1,000
For insurance on \$100,000 for two years.....	2,500
For walks to Main Building.....	500
	<hr/>
	\$154,000

I herewith submit the Report of the Dean of the Faculty of the Medical Department of the University, and the Report of the Principal of the Branch Normal College, covering the same period ; also, the Catalogue of the University for the session ending, June 10th, 1886 ; all of which papers are made a part of this Report, and submitted for your consideration and action.

Respectfully submitted,

GEO. M. EDGAR,

President of the Arkansas Industrial University.

B O A R D
OF
T R U S T E E S.

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F. M. WHITHAM, A. M., (Graduate of U. S. Naval Academy),

Professor of Applied Mathematics.

GEO. D. PURINTON, A. M.,

Professor of Chemistry, Mineralogy, Geology and Biology.

J. F. HOWELL, A. M.,

Professor of Normal Department.

*.....
Instructor of Tactics and Commandant of Cadets.

*To be detailed from the United States Army.

ASSISTANT PROFESSORS.

A. F. LEWIS, A. M.,
Mathematics, English, Book-Keeping and Commercial Laws.

GEO. W. MACON, A. B.,
Greek, Mathematics and English.

J. B. GREENE, A. M.,
Latin and English.

MISS E. C. WEIMAR,
English and Latin.

MISS R. W. MOSS,
Elocution, History and English.

MISS KATIE V. KING,
Vocal and Instrumental Music.

MISS LIBBIE HALL,
Drawing and Industrial Art Work for Girls.

STONEWALL TOMPKINS,
Superintendent of Shops.

MEDICAL DEPARTMENT.

LITTLE ROCK, ARK.

SESSION OF 1886-7.

PROFESSORS:

P. O. HOOPER, M. D.,

Practice of Medicine.

EDWIN BENTLEY, M. D.,

Institutes and Practice of Surgery.

JAS. A. DIBRELL, JR., M. D.,

General, Descriptive and Surgical Anatomy, and President of Faculty.

A. L. BREYSACHER, M. D.,

Obstetrics and Diseases of Women and Children.

JOHN J. McALMONT, M. D.,

Materia Medica, Therapeutics, Hygiene and Botany.

JAMES H. SOUTHALL, M. D.,

Institutes of Medicine.

ROSCOE G. JENNINGS, M. D.,

Clinical Surgery and Dermatology.

CUTHBERT P. CONRAD, A. M., UNIVERSITY OF VIRGINIA,

Medical Chemistry and Toxicology.

L. P. GIBSON, M. D.,

Demonstrator of Anatomy.

T. E. MURRELL, M. D.,

Ophthalmology and Otology.

JAMES H. LENOW, M. D.,

Diseases of Genito-Urinary Organs.

CLAIBORNE WATKINS, M. D.,

Physical Diagnosis and Clinical Medicine.

LOUIS R. STARK, M. D.,

Gynecology.

JOHN WATERS, M. D.,
Clinical Medicine and Prosector of Anatomy.

B. L. GOLDING, U. S. SIGNAL SERVICE,
Meteorology, Etc.

John H. Shed, Janitor, at the College, on Second, between
Main and Louisiana Streets.

All communications should be addressed to

R. G. JENNINGS, M. D., Secretary of Faculty,
Little Rock, Ark.

CATALOGUE OF STUDENTS.

SESSION 1885-6.

COLLEGIATE DEPARTMENT.

SENIOR CLASS.

Bates, J. H.....	Cincinnati, Washington County, Ark.
Leverett, Mary.....	Fayetteville, Washington County, Ark.
Middleton, Mai.....	Fayetteville, Washington County, Ark.
Mulholland, Sarah.....	Fayetteville, Washington County, Ark.
Tillar, B. J.....	Tillar's Station, Drew County, Ark.
Total.....	5.

JUNIOR CLASS.

Crump, Mintie H.....	Harrison, Boone County, Ark.
Dickson, W. E.....	Magnolia, Columbia County, Ark.
Duffie, B. C.....	Princeton, Dallas County, Ark.
Gibson, A. V.....	DeWitt, Arkansas County, Ark.
Hipolite, F. A.....	Devall's Bluff, Prairie County, Ark.
Humphreys, T. H.....	Fort Smith, Sebastian County, Ark.
Vaughn, W. R.....	Little Rock, Pulaski County, Ark.
Wilkinson, H. D.....	Lavaca, Sebastian County, Ark.
Total.....	8.

SOPHOMORE CLASS.

Bowles, Preston.....	Hancock, Washington County, Ark.
Brooks, S. J.....	Viney Grove, Washington County, Ark.
Crozier, W. N.....	Fayetteville, Washington County, Ark.
Davies, C. A.....	Fayetteville, Washington County, Ark.
Danaher, Mike.....	Little Rock, Pulaski County, Ark.
Drake, N. F.....	Cincinnati, Washington County, Ark.
Flynn, W. M.....	Fayetteville, Washington County, Ark.
Hall, H. J.....	Fayetteville, Washington County, Ark.

Harris, Ada.....	Fayetteville, Washington County, Ark.
Hobbs, J. H.....	Bentonville, Benton County, Ark.
Miller, Wm.....	Plantersville, Drew County, Ark.
Obenshain, Ora.....	Fayetteville, Washington County, Ark.
Ostrander, Effie.....	Fayetteville, Washington County, Ark.
Pace, Ida.....	Fayetteville, Washington County, Ark.
Polson, Alice.....	Southwest City, McDonald County, Mo.
Powell, W. W.....	Melbourne, Izard County, Ark.
Reed, J. L.....	Fayetteville, Washington County, Ark.
Stone, A. B.....	Fayetteville, Washington County, Ark.
Taff, J. H.....	Waldron, Scott County, Ark.
Treadwell, Lee.....	Toledo, Cleveland County, Ark.
Warren, G. A.....	Hazel Grove, Independence County, Ark.
Williams, H. E.....	Fayetteville, Washington County, Ark.
Total.....	22.

FRESHMAN CLASS.

Aiken, Don.....	Fayetteville, Washington County, Ark.
Botefuhr, Beulah.....	Fayetteville, Washington County, Ark.
Coffey, Belle.....	Fayetteville, Washington County, Ark.
Downes, S. A.	Nashville, Howard County, Ark.
Duffie, Sidney.....	Princeton, Dallas County, Ark.
Edgar, G. D.....	Fayetteville, Washington County, Ark.
Ellis, Kate.....	Fayetteville, Washington County, Ark.
Fishback, L. F.....	Fort Smith, Sebastian County, Ark.
Fuqua, Birdie.....	Fayetteville, Washington County, Ark.
Ganaway, J. R.....	Warren, Bradley County, Ark.
Harrison, Grace.....	Washington, D. C.
Humphreys, G. A.....	Fort Smith, Sebastian County, Ark.
Kemp, Elzie.....	Fayetteville, Washington County, Ark.
McIlroy, J. H.....	Fayetteville, Washington County, Ark.
McNeely, J. C.....	Little Rock, Pulaski County, Ark.
McRoy, Minnie....	Fayetteville, Washington County, Ark.
Reed, J. L.....	Fayetteville, Washington County, Ark.
Reed, W. L.....	Fayetteville, Washington County, Ark.
Rutherford, Julia.....	Billingsley, Washington County, Ark.

Skelton, G. V.....	Fayetteville, Washington County, Ark.
Slagle, Ida.....	Siloam, Benton, County, Ark.
Southerland, J. W.....	Hindsville, Madison County, Ark.
Taff, A. G.....	Waldron, Scott County, Ark.
Taff, J. A.....	Waldron, Scott County, Ark.
Taff, Mollie.....	Waldron, Scott County, Ark.
Thornton, T. J.....	Hampton, Calhoun County, Ark.
Tillman, Annie.....	Fayetteville, Washington County, Ark.
Trott, Bertha.....	Fayetteville, Washington County, Ark.
Valentine, T. J.....	Webb City, Franklin County, Ark.
Wade, J. M.....	Blanshard's Springs, Union County, La.
Whitford, W. E.	Silver Hill, Sevier County, Ark.
Wainwright, Fannie.....	Fayetteville, Washington County, Ark.
Wheeler, J. N.....	Warren, Bradley County, Ark.
Total.....	33.

PREPARATORY DEPARTMENT.

SUB-FRESHMAN CLASS.

Albright G. E.....	Fayetteville, Washington County, Ark.
Ammons, Molsie.....	El Dorado, Union County, Ark.
Anderson, W. L.....	Fayetteville, Washington County, Ark.
Baum, Nettie.....	Fayetteville, Washington County, Ark.
Beard, Elisha.....	Oil Trough, Independence County, Ark.
Blanks, W. L.....	Hamburg, Ashley County, Ark.
Brown, A. S.....	Charleston, Franklin County, Ark.
Brown, John.....	Belmont, Crawford County, Ark.
Brown, J. R.....	Gurdon, Clark County, Ark.
Bruce, T. V.....	Fort Smith, Sebastian County, Ark.
Campbell, Pearl.....	Fayetteville, Washington County, Ark.
Corley, E. P.....	Fayetteville, Washington County, Ark.
Dean, Mark.....	Morrilton, Conway County, Ark.
Dibrell, M. S.....	Van Buren, Crawford County, Ark.
Dowdle, T. A.....	Morrilton, Conway County, Ark.
Dowell, Delia.....	Fayetteville, Washington County, Ark.
Dowell, S. F.....	Fayetteville, Washington County, Ark.
Dunaway, Maggie.....	Fayetteville, Washington County, Ark.
Dunaway, W. C.....	Good Hope, Faulkner County, Ark.
Edgar, Bessie.....	Fayetteville, Washington County, Ark.
Ellis, Jessie.....	Fayetteville, Washington County, Ark.
Gaines, J. H.....	Greenwood, Sebastian County, Ark.
Greene, A. T.....	Morrilton, Conway County, Ark.
Gregg, Dora.....	Fayetteville, Washington County, Ark.
Gregg, H. L.....	Fayetteville, Washington County, Ark.
Gunter, W. T.....	Fayetteville, Washington County, Ark.
Hames, W. S.....	Pineville, Izard County, Ark.
Harris, R. D.....	Melbourne, Izard County, Ark.
Hervey, W. R.....	Morrilton, Conway County, Ark.
Huckleberry, J. H.....	Van Buren, Crawford County, Ark.

Irvin, R. W.....	Fayetteville, Washington County, Ark.
Johnson, W. H.....	Clarendon, Monroe County, Ark.
Kingston, C. D.....	Granby, Newton County, Ark.
Lane, A. C.....	Dallas, Polk County, Ark.
Magness, J. W.....	Fayetteville, Washington County, Ark.
Messenger, E. F.....	Prattsville, Grant County, Ark.
Michaels, J. F.....	Fayetteville, Washington County, Ark.
Miller, E. S.....	Fort Smith, Sebastian County, Ark.
Millsaps, N.....	Fayetteville, Washington County, Ark.
Morrow, Mattie.....	Fayetteville, Washington County, Ark.
Mosely, B. J.....	Eureka Springs, Carroll County, Ark.
North, Nattie....	Maguire's Store, Washington Co., Ark.
Northrop, A. E.....	Pass Christian, Harrison County, Miss.
Obenshain, Ula.....	Eureka Springs, Carroll County, Ark.
Pace, Frank.....	Fayetteville, Washington County, Ark.
Park, P. J.....	Cabot, Lonoke, County, Ark.
Pittman, H. N.....	Fayetteville, Washington County, Ark.
Pittman, Jennie.....	Fayetteville, Washington County, Ark.
Reynolds, Mattie.....	Fayetteville, Washington County, Ark.
Robertson, F. O.....	Monticello, Drew County, Ark.
Routh, Louella.....	Boonsborro, Washington County, Ark.
Rutherford, R. L.....	Billingsly, Washington Connty, Ark.
Shreve, A. W.....	Farmington, Washington County, Ark.
Shreve, H. B.....	Farmington, Washington County, Ark.
Sloan, J. H.....	Powhatan, Lawrence County, Ark.
Taylor, Maggie.....	Fayetteville, Washington County, Ark.
Turner, F. P.....	Newport, Jackson County, Ark.
Turner, G. W.....	Ossawotamie, Kansas.
Vaughn, Cordie.....	Fayetteville, Washington County, Ark.
Volentine, Alice.....	Webb City, Franklin County, Ark.
Walker, Nannie.....	Fayetteville, Washington County, Ark.
Waters, G. A.....	Dayton, Sebastian County, Ark.
Webb, Abner.....	New Edinburg, Cleveland County, Ark.
White, E. J.....	Bentonville, Benton County, Ark.
Whitmore, J. T.....	Center Point, Howard County, Ark.
Williams, O. H.....	Fayetteville, Washington County, Ark.

Wines, Lula.....	Fayetteville, Washington County, Ark.
Wood, R. E.....	Wallaceburg, Hempstead County, Ark.
Young, C. I.....	Fayetteville, Washington County, Ark.
Total.....	69.

A CLASS.

Baldrige, G. W.....	Fayetteville, Washington County, Ark.
Barner, J. W.....	Turner, Phillips County, Ark.
Bond, Board	Newport, Jackson County, Ark.
Botefuhr, Fannie.....	Fayetteville, Washington County, Ark.
Bray, W. O.....	Fayetteville, Washington County, Ark.
Bush, C. F.....	Van Buren, Crawford County, Ark.
Butler, D. C.....	Malvern, Hot Springs County, Ark.
Campbell, R. O.....	Fayetteville, Washington County, Ark.
Clinkscales, N. A.....	Van Buren, Crawford County, Ark.
Collins, Lillie.....	Fayetteville, Washington County, Ark.
Conley, J. F.....	Waldron, Scott County, Ark.
Curry, Jennie.....	Fayetteville, Washington County, Ark.
Curry, Lula.....	Fayetteville, Washington County, Ark.
Curry, May.....	Fayetteville, Washington County, Ark.
Davidson, Lenna.....	Fayetteville, Washington County, Ark.
Davies, Elza.....	Fayetteville, Washington County, Ark.
Davis, Zeno W.....	Fort Smith, Sebastian County, Ark.
Doak, J. A.....	Boonsboro', Washington County, Ark.
Duke, Annie.....	Fayetteville, Washington County, Ark.
Eoff, L. F.....	Bellfonte, Boone County, Ark.
Fuqua, Jessie.....	Fayetteville, Washington County, Ark.
Greene, Fred W.....	Fayetteville, Washington County, Ark.
Hamiter, J. H.....	Walnut Hills, Lafayette County, Ark.
Hamor, Capitola.....	Winnsboro', Texas.
Hansard, C. O.....	Fayetteville, Washington County, Ark.
Harris, J. F.....	Hot Springs, Garland County, Ark.
Harrison, Lydia.....	Fayetteville, Washington County, Ark.
Healy, Dan.....	Fayetteville, Washington County, Ark.
Horton, S. A.....	Fair View, Dallas County, Ark.
Hudson, E. M.....	Dahoma, Franklin County, Ark.

Hurlbut, Maude,Fayetteville, Washington County, Ark.
 Jackson, Edna.....Fayetteville, Washington County, Ark.
 Jennings, Lizzie.....Fayetteville, Washington County, Ark.
 Jobe, Fannie.....Fayetteville, Washington County, Ark.
 Jones, Bertie.....Fayetteville, Washington County, Ark.
 Lacotts, J. A.....DeWitt, Arkansas County, Ark.
 Lee, Frank.....Fayetteville, Washington County, Ark.
 Lee, Lillie.....Fayetteville, Washington County, Ark.
 Lewis, Joe.....Boonsboro', Washington County, Ark.
 Logan, Ed.....Walnut Hills, Lafayette County, Ark.
 Mayes, Ida.....Fayetteville, Washington County, Ark.
 McGough, T. J.....Dilo, Union County, Ark.
 McIlroy, C. D.....Fayetteville, Washington County, Ark.
 Mitchell, J. F.....Coffee Creek, Phillips County, Ark.
 Morrow, S. Y.....Fayetteville, Washington County, Ark.
 Nash, W. A.....Jonesboro', Craighead County, Ark.
 Nix, Minnie.....Fayetteville, Washington County, Ark.
 Oliver, Wallace.....Lee's Creek, Crawford County, Ark.
 Pace, Henry.....Fayetteville, Washington County, Ark.
 Parker, E. L.....DeWitt, Arkansas County, Ark.
 Pollard, Mary.....Fayetteville, Washington County, Ark.
 Pounds, W. M.....Jonesboro', Craighead County, Ark.
 Price, W. M.....Little Rock, Pulaski County, Ark.
 Quinney, W. R.....Lanark, Bradley County, Ark.
 Reed, F. W.....Reed's, Jasper County, Ark.
 Reed, Maude.....Fayetteville, Washington County, Ark.
 Reynolds, Farie.....Fayetteville, Washington County, Ark.
 Savage, W. J.....Eureka Springs, Carroll County, Ark.
 Saxon, E. F.....Lisbon, Union County, Ark.
 Schoolfield, R. E.....Fayetteville, Washington County, Ark.
 Shaw, G. G.....Conway, Faulkner County, Ark.
 Smith, S. K.....Fayetteville, Washington Ark.
 Switzer, D. M.....Petersburg, Ashley, County, Ark.
 Thomas, Lizzie.....Fayetteville, Washington County, Ark.
 Thomson, Floyd.....Hope, Hempstead County, Ark.
 Treadwell, Evans.....Toledo, Cleveland County, Ark.
 Turner, J. L.....Cypert, Phillips County, Ark.

Van Winkle, Peter.....	Fayetteville, Washington County, Ark.
Vaughan, J. C.....	Fayetteville, Washington County, Ark.
Vaughan, R. E.....	Fayetteville, Washington County, Ark.
Volentine, J. B.....	Webb City, Franklin County, Ark.
Walker, Lou.....	Fayetteville, Washington County, Ark.
Ward, W. J.....	Charlotte, Independence County, Ark.
Watson, Fannie	Boonsboro, Washington County, Ark.
*West, R. E. L....	Clarendon, Monroe County, Ark.
Whitten, J. D.....	Bellefonte, Boone County, Ark.
Wigley, Mittie.....	Mulberry, Franklin County, Ark.
Zellner, J. N.....	Vinney Grove, Washington County, Ark.
Total	78.

*Died September 30, 1885.

B CLASS.

Aiken, Gertie.....	Fayetteville, Washington County, Ark.
Ashley, W. H.....	Little Rock, Pulaski County, Ark.
Baldrige, J. R.....	Fayetteville, Washington County, Ark.
Breeden, G. O.....	Morrilton, Conway County, Ark.
Brickell, J. B.....	Poplar Grove, Phillips County, Ark.
Burns, Alice.....	El Dorado, Union County, Ark.
Byrnes, Dora.....	Fayetteville, Washington County, Ark.
Carter, G. W.....	Carter's Store, Washington County, Ark.
Carter, Lizzie.....	Fayetteville, Washington County, Ark.
Crawford, Della	Fayetteville, Washington County, Ark.
Cummings, Lula.....	Prairie Grove, Madison County, Ark.
Dale, Nina.....	Fayetteville, Washington County, Ark.
Deaderick, J. D.....	Vandale, Cross County, Ark.
Dowdle, Katie.....	Morrilton, Conway County, Ark.
Ferguson, A. L.....	Fayetteville, Washington County, Ark.
Ferguson, George.....	Fayetteville, Washington County, Ark.
Fisher, N. F.....	Greenwood, Sebastian County, Ark.
George, K. L.....	Reed's Landing, Pulaski County, Ark.
Green, T. C.....	Barton, Phillips County, Ark.
Gregg, Ida.....	Fayetteville, Washington County, Ark.

Harrison, W. H.....	Sulphur Rock, Independence Co., Ark.
Hight, Beulah.....	Whitener, Madison County, Ark.
Hollis, Russell.....	Orlando, Cleveland County, Ark.
Horton, Maude.....	Fair View, Dallas County, Ark.
Hunt, Gertie.....	Fayetteville, Washington County, Ark.
Irvin, R. B.....	Fayetteville, Washington County, Ark.
Jackson, A. L.....	Altus, Franklin County, Ark.
Johnson, G. W.....	Fayetteville, Washington County, Ark.
Lewis, L. L.....	Fayetteville, Washington County, Ark.
Lowry, Sam.....	Helena, Phillips County, Ark.
Martin, E. W.....	Fort Smith, Sebastian County, Ark.
McCrary, R. D.....	Mineral Springs, Howard County, Ark.
McIlroy, Annie.....	Fayetteville, Washington County, Ark.
McNeely, T. H.....	Rackensack, Pulaski County, Ark.
Meyer, J. R.....	Pine Bluff, Jefferson County, Ark.
Middleton, Maude.....	Fayetteville, Washington County, Ark.
Mills, B. L.....	El Paso, White County, Ark.
Nunn, J. B.....	Camden, Ouachita County, Ark.
O'Connell, Maggie.....	Fayetteville, Washington County, Ark.
Probst, C. J.....	Little Rock, Pulaski Countw, Ark.
Shaver, S. L.....	Grange, Sharp County, Ark.
Smith, Leon.....	Fayetteville, Washington County, Ark.
Smith, W. L.....	Fayetteville, Washington County, Ark.
Stuart, R. B.....	Columbus, Hempstead County, Ark.
Switzer, Nettie M.....	Petersburg, Ashley County, Ark.
Taff, S. M.....	Fayetteville, Washington County, Ark.
Velvin, R. W.....	Hope, Hempstead County, Ark.
Washmood, W. B.....	Little Rock, Pulaski County, Ark.
Watson, J. E.....	Ozark, Franklin County, Ark.
Wells, T. R.....	Morrilton, Conway County, Ark.
Wilson, Lizzie.....	Fayetteville, Washington County, Ark.
Total.....	51..

C CLASS.

Archias, L. H.....	Fayetteville, Washington County, Ark.
Brown, A. W.....	Little Rock, Pulaski County, Ark.

Buckner, Jennie.....Fayetteville, Washington County, Ark.
 Butt, Ellie.....Fayetteville, Washington County, Ark.
 Childs, R. M.....Lanark, Bradley County, Ark.
 Collins, S. S.....Van Buren, Crawford County, Ark.
 Deaderick, I. N.....Vanndale, Cross County, Ark.
 Dodds, J. B., Jr.....Pine Bluff, Jefferson County, Ark.
 Edgar, Geo. T.....Fayetteville, Washington County, Ark.
 Everett, J. W.....Norwoodville, Sevier County, Ark.
 Ferguson, J. W.....Fayetteville, Washington County, Ark.
 Faulker, C. E.....Helena, Phillips County, Ark.
 Greer, Luther.....Searcy, White County, Ark.
 Halk, J. W.....Cherry Valley, Cross County, Ark.
 Harris, R. C.....Fayetteville, Washington County, Ark.
 Howell, Willey.....Fayetteville, Washington County, Ark.
 Howerton, C. T.....Fayetteville, Washington County, Ark.
 Hulse, M. L.....Fayetteville, Washington County, Ark.
 Hurlbut, J. S.....Fayetteville, Washington County, Ark.
 Jackman, J. S.....New Gascony, Jefferson County, Ark.
 Jackson, Hugh.....Fayetteville, Washington County, Ark.
 Jelks, J. L.....Riverside, Woodruff County, Ark.
 Johnson, Lydia K.....Fayetteville, Washington County, Ark.
 Kellogg, W. S.....Little Rock, Pulaski County, Ark.
 Killough, Wesley.....Vanndale, Cross County, Ark.
 Langford, A. E. B.....Champagnolle, Union County, Ark.
 Lee, C. E.....Fayetteville, Washington County, Ark.
 Long, Annie.....Wesley, Madison County, Ark.
 McKinney, W. M.....Akron, Independence County, Ark.
 McNair, W. D.....Fayetteville, Washington County, Ark.
 Murrell, Walter.....Austin, Lonoke County, Ark.
 Northrop, J. D.....Pass Christian, Harrison County, Miss.
 Pounds, W. A.....Jonesboro, Craighead County, Ark.
 Randolph, Berry.....Hot Springs, Garland County, Ark.
 Sevier, A. H.....Walnut Hills, Lafayette County, Ark.
 Shreve, H. W.....Farmington, Washington County, Ark.

Simmons, Ella.....	Fayetteville, Washington County, Ark.
Smith, R. L.....	Russellville, Pope County, Ark.
Sosbee, J. M.....	Santos, Pope County, Ark.
Talley, J. C.....	Calico Rock, IZard County, Ark.
Wade, Eddie B.....	Fayetteville, Washington County, Ark.
Wade, M. C.....	Fayetteville, Washington County, Ark.
Ward, W. J.....	Fayetteville, Washington County, Ark.
Warren, J. T.....	El Paso, White County, Ark.
Webster, Katie.....	Little Rock, Pulaski County, Ark.
White, Lula.....	Fayetteville, Washington County, Ark.
Yarbro', W. P.....	Riverside, Woodruff County, Ark.
Total.....	47.

MUSIC CLASS.

Boles, Mary.....	Fayetteville, Washington County, Ark.
Buckner, Jennie.....	Fayetteville, Washington County, Ark.
Carter, Nora.....	Fayetteville, Washington County, Ark.
Carter, Lizzie.....	Fayetteville, Washington County, Ark.
Collins, Lillie.....	Little Rock, Pulaski County, Ark.
Dale, Nina.....	Fayetteville, Washington County, Ark.
Davidson, Lenna.....	Fayetteville, Washington County, Ark.
Dowell, Delia.....	Fayetteville, Washington County, Ark.
Dowdle, Kate.....	Morrilton, Conway County, Ark.
Duffie, Sidney.....	Princeton, Dallas County, Ark.
Edgar, Gertrude.....	Fayetteville, Washington County, Ark.
Fuqua, Birdie.....	Fayetteville, Washington County, Ark.
Gregg, Ida.....	Fayetteville, Washington County, Ark.
Gunter, Gertrude.....	Fayetteville, Washington County, Ark.
Harrison, Lizzie.....	Fayetteville, Washington County, Ark.
Harris, Mary.....	Bentonville, Benton County, Ark.
Harris, John.....	Hot Springs, Garland County, Ark.
Healy, Mary.....	Fayetteville, Washington County, Ark.
Horton, Maud.....	Fairview, Dallas County, Ark.
Jennings, Lily.....	Fayetteville, Washington County, Ark.
Jennings, Lizzie.....	Fayetteville, Washington County, Ark.
Johnson, Lydia.....	Fayetteville, Washington County, Ark.

Knight, Carrie.....	Fayetteville, Washington County, Ark.
Loy, Minnie.....	Fayetteville, Washington County, Ark.
Macon, G. W.....	Talladega, Alabama.
Maguire, Addie.....	Maguire's Store, Washington Co. Ark.
Phelps, Mamie.....	Fayetteville, Washington County, Ark.
Pitman, Mary.....	Fayetteville, Washington County, Ark.
Polson, Alice.....	Southwest City, McDonald County, Mo.
Reed, Maud.....	Fayetteville, Washington County, Ark.
Sanders, Zena.....	Huntsville, Madison County, Ark.
Slagle, Ida.....	Rico, Benton County, Ark.
Stone, Amanda.....	Fayetteville, Washington County, Ark.
Thurmond, Mamie.....	Fayetteville, Washington County, Ark.
Trott, Robbie.....	Fayetteville, Washington County, Ark.
Van Winkle, Peter.....	Fayetteville, Washington County, Ark.
Walker, Mannie.....	Fayetteville, Washington County, Ark.
Walker, Lou.....	Fayetteville, Washington County, Ark.
Webster, Kate.....	Little Rock, Pulaski County, Ark.
Whitlow, Mabel.....	Pilot Grove, Cooper County, Mo.
Watterman, Jessie.....	Fayetteville, Washington County, Ark.
Williams, Mattie.....	Fayetteville, Washington County, Ark.
Wilson, Bell.....	Fayetteville, Washington County, Ark.
Total.....	43.

ART CLASS.

Baum, Lelia.....	Fayetteville, Washington County, Ark.
Davies, Audie.....	Fayetteville, Washington County, Ark.
Putnam, Annie.....	Fayetteville, Washington County, Ark.
Reed, Lina.....	Fayetteville, Washington County, Ark.
Walker, Nannie.....	Fayetteville, Washington County, Ark.
Total.....	5.

GENERAL SUMMARY.

LITERARY, SCIENTIFIC AND ART SCHOOLS, FAYETTEVILLE.

Collegiate Department.....	68
Preparatory Department.....	245
Failed to Pass Entrance Examination.....	15
Music Class.....	43
Art Class.....	5
Total.....	<u>376</u>
Names Repeated in Music and Art.....	22
Net Total.....	<u>354</u>
Medical Department, Little Rock.....	53
Branch Normal.....	<u>203</u>
Grand Total.....	610

COURSES OF STUDY.

COLLEGIATE DEPARTMENT.

The following are the College courses :

1. AGRICULTURAL COURSE, leading to the distinction of Graduate in Agriculture.
 2. NORMAL COURSE, leading to the distinction of Graduate in the Normal Department.
 3. Mechanical Engineering, (Mech. E.)
 4. Civil Engineering Course, (C. E.)
 5. General Science Course, (B. S.)
 6. Bachelor of Letters Course, (B. Let.)
 7. Language Course, (B. A.)
-

HIGH SCHOOL DEPARTMENT.

This department, which is between the Grammar School and the College, embraces the following courses :

1. Language Course.
 2. Short Normal Course.
 3. Business Course.
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GRAMMAR SCHOOL.

This school, made necessary by the imperfect preparatory training in many of the Counties of the State, embraces two classes, instruction in which is confined to the Common School branches. It is hoped that the Public School system may soon become so efficient as to enable the University to dispense with classes of this grade.

AGRICULTURAL COURSE.

A figure after any subject indicates the number of recitations per week.

YEARS.	Hours of Recit'ns.	FIRST TERM.	SECOND TERM.	THIRD TERM.
FIRST.		Eng. Gram. and Composition	Eng. Gram. and Composition	Eng. Gram. and Composition
		Arithmetic	Arithmetic	Arithmetic
		U. S. History	U. S. History	U. S. History
		Reading and Spelling	Reading and Spelling	Reading and Spelling
		Physical Geography	Elementary Physics	Elementary Physics
		{ Practical Agriculture or Drawing and Shop Work }	{ Practical Agricultural or Drawing and Shop Work }	{ Practical Agricultural or Drawing and Shop Work }
SECOND.		Eng. Analysis and Comp'n...	Eng. Analysis & Composition	Eng. Analysis and Compo'n...
		Algebra	Algebra and Geometry	Geometry
		Practical Agriculture	Practical Agriculture	Practical Agriculture
		{ El. Chemistry, 3, Elocu- tion, 2	{ El. Physiology, 3, Elocu- tion, 2	El. Botany, 3, Elocution, 2 ...
THIRD.		{ Practical Agriculture or Drawing and Shop Work. }	{ Practical Agriculture or Drawing and Shop Work. }	Practical Agriculture or Drawing and Shop Work...
	1st	Algebra	Algebra and Geometry	Geometry
	2d	Physiology	Zoology	Botany
	3d	English	English	English
	4th	General Chemistry	General Chemistry	Gen. Chem. and Laboratory..
	5th	.....	.....	.....
FOURTH.	6th	{ Practical Agricultural or Shop Work and Drawing. }	{ Practical Agriculture or Shop Work and Drawing. }	Practical Agriculture or Shop Work and Drawing
	1st	Analyt. Chemistry, Qual	Analyt. Chemistry, Qual	Agricultural Chemistry
	2d	Struct. and Microscop. Bot'y.	Science of Agriculture .....	.....
	3d	Geometry	Plane Trigonometry	Trigonometry & Surveying...
	4th	.....	.....	Ethics, 3, Polit. Econ, 2
	5th	Geology	{ Lectures on Entomology, 3, Veterinary Science, 2	Practical Agriculture
	6th	{ Engineering and Architec- ture, 3, Shop Work, 2	{ Engineering and Architec- ture, 3, Shop Work, 2	Practical Agriculture, 2, En- gineering and Arch., 8

A post-graduate course of two years, embracing a more extended course in Chemistry, Agricultural Science, Geology, Mineralogy, Mathematics, German, Ethics, Sociology and Evidences of Christianity, with Astronomy and Constitutional Law, will entitle the student to the degree of Bachelor of Science.

NORMAL COURSE.

YEARS.	Hours of Recit'n.	FIRST TERM.	SECOND TERM.	THIRD TERM.
FIRST.		Eng. Gram. and Composition.	Eng. Gram. and Composition	Eng. Gram. & Composition ...
		Arithmetic.....	Arithmetic.....	Arithmetic.....
		U. S. History.....	U. S. History.....	U. S. History
		Reading and Spelling—Methods of Teaching.....	Reading and Spelling—Methods of Teaching.....	Reading and Spelling—Methods of Teaching.....
		Latin { Gildersleeve's Gram. Jones's 1st Lessons.....	Latin Gram. and Lessons	Latin Gram. and Lessons.....
		Drawing and Shop Work.....	Drawing and Shop Work.....	Drawing and Shop Work.....
SECOND.		Eng. Analysis and Comp'n...	Eng. Analysis and Composi'n	Eng. Analysis and Composi'n
		Algebra.....	Algebra and Geometry.....	Geometry.....
		Latin { Grammar, Composi- tion and Reader.....	Latin, Cæsar or Curtius.....	Latin, Cæsar or Curtius.....
		Pedagogy	Pedagogy.....	Pedagogy.....
		Drawing and Shop Work.....	Drawing and Shop Work	Drawing and Shop Work.....
	
THIRD.	1st.	Algebra.....	Algebra and Geometry.....	Geometry.....
	2d.	.....	Zoology, 2	Botany, 2
	3d.	English.....	English.....	English.....
	4th.	Physics.....	Methods of Teaching, 3.....	Theo. & Pract. Teaching, 3..
	5th.	Latin, Cæsar or Nepos	Latin, Virgil, & Rom. Hist ...	Latin, Virgil & Rom. History
	6th.	Shop Work and Drawing.....	Shop Work and Drawing.....	Shop Work and Drawing.....
FOURTH.	1st.	History of Education, 3, Eng- lish, 2.....	Philos. of Education, 3, Eng- lish, 2.....	Constitution U. S. and Ark., 3, English, 2
	2d.	Latin, Cicero's Orations.....	Latin, Odes of Horace.....	Latin, Livy.....
	3d.	Geometry.....	Plane Trigonometry.....	Trigonometry and Surveying.
	4th.	General Chemistry.....	General Chemistry.....	Ethics and Political Economy
	5th.	.....	.....	.....
	6th.	Drawing and Shop Work.....	Drawing and Shop Work.....	Psychology, 3, School Law, 2

A post-graduate course of two years, embracing Mineralogy, Geology, Latin, Anglo-Saxon, Analytical Geometry, English Psychology, Ethics, Sociology, Evidences of Christianity, Political Science and Logic, will entitle the student to the degree of Bachelor of Letters.

COURSE OF MECHANICAL ENGINEERING.

CLASSES.	Hours of Recitation.			
		FIRST TERM.	SECOND TERM.	THIRD TERM.
FRESHMAN.	1st.	Algebra.....	Algebra and Geometry.....	Geometry.....
	2d.	Mechanical Drawing, Work Shop Appliances	Zoology.....	Botany
	3d.	English.....	English.	English
	4th.	Physics.....	Physical Laboratory Work ..	Elementary Mechanics.....
	5th.	.....	.....	.....
	6th.	Shop Work and Drawing.....	Shop Work and Drawing	Shop Work and Drawing
SOPHOMORE.	1st.	Mechanical Drawing.....	Mechanical Drawing.....	Mechanical Drawing.....
	2d.	Elements of Mechanism, 3....	Elements of Mechanism, 3....	Elements of Mechanism, 3....
	3d.	Geometry.....	Plane Trigonometry.....	Trigonometry and Surveying
	4th.	General Chemistry.....	General Chemistry.....	Gen. Chem. and Laboratory
	5th.	Electricity.....	Heat.....	Physical Laboratory Work...
	6th.	Shop Work, 2.....	Shop Work, 2.....	Shop Work, 2.....
JUNIOR.	1st.	Analyt. Chemistry, Qual.....	Analyt. Chem., Qual., 4.....	.....
	2d.	Analytical Geometry.....	Analyt. Geom. and Calculus	Calculus
	3d.	.....	El. Applied Mechanics, 3.....	Elem. Applied Mechanics.....
	4th.	Machinery and Mill Work.....	Machinery and Mill Work....	Machinery and Mill Work....
	5th.	Steam Engine and Boilers.....	Steam Engine and Boilers, 3..	Mineralogy.....
	6th.	Drawing	Drawing.....	Drawing.....
SENIOR.	1st.	Rankine's Steam Engine.....	Rankine's Steam Engine.....	Rankine's Steam Engine.....
	2d.	Lectures on Designing.....	.....	.....
	3d.	Astronomy	Astronomy.....	Lectures on Designing, 3, Mech. & Hydr. Engin'g, 2
	4th.	Applied Mechanics.....	Applied Mechanics.....	Applied Mechanics.....
	5th.	.....	Ind. Chemistry, half term, Ethics, half term.....	Ethics and Ev. Christianity...
	6th.	Drawing	Drawing	Thesis

COURSE OF CIVIL ENGINEERING.

CLASSES.	Hours of Recitation	FIRST TERM.	SECOND TERM.	THIRD TERM.
FRESHMAN.	1st.	Algebra.....	Algebra and Geometry.....	Geometry.....
	2d.	Mechanical Drawing.....	Zoology	Botany
	3d.	English.....	English	English.....
	4th.	Physics	Physical Laboratory Work..	Elementary Mechanics.....
	5th.	.....	.....	.....
	6th.	Shop Work and Drawing.....	Shop Work and Drawing.....	Shop Work and Drawing.....
SOPHOMORE.	1st.	Mechanical Drawing.....	Mechanical Drawing.....	Mechanical Drawing.
	2d.	.....	.....	.....
	3d.	Geometry.....	Plane Trigonometry.....	Trigonometry and Surveying
	4th.	General Chemistry	General Chemistry.....	Gen. Chem. & Laboratoy.....
	5th.	Electricity.....	Heat	Physical Laboratory Work...
	6th.	Surveying, 3, Shop Work, 2...	Surveying, 3, Shop Work, 2...	Topog'y, 3, Shop Work, 2.....
JUNIOR.	1st.	Analyt. Chemistry, Qual.....	Higher Surveying.....	.....
	2d.	Analytical Geometry.....	Analyt. Geom. and Calculus	Calculus.....
	3d.	Field Engineering, R. Rds. ..	Field Engineering, 2.....	Elem. Applied Mechanics.....
	4th.	.....	El. Applied Mechanics, 3.....	Advanced Topography.....
	5th.	Geology.....	Geology	Mineralogy
	6th.	Drawing	Drawing	Drawing.....
SENIOR.	1st.	Civil Engineering.....	Civil Engineering.....	Civil Engineering.....
	2d.	Lectures on Designing.....	.....	.....
	3d.	Astronomy	Astronomy	Lectures on Designing, 3.....
	4th.	Applied Mechanics.....	Applied Mechanics.....	Mech. & Hydr. Engin'g, 2.....
	5th.	.....	Ind. Chemistry, $\frac{1}{2}$ term.....	Applied Mechanics.....
	6th.	Drawing	Ethics, half term.....	Ethics & Ev. Christianity.....
			Drawing ,.....	Thesis

GENERAL SCIENCE COURSE FOR BACHELOR OF SCIENCE.

CLASSES.	HOURS of Recitation.	FIRST TERM.	SECOND TERM.	THIRD TERM.
FRESHMAN.	1st.	Algebra.....	Algebra and Geometry.....	Geometry.....
	2d.	Physiology.....	Zoology.....	Botany.....
	3d.	English.....	English.....	English.....
	4th.	Physics.....	Physical Laboratory Work.....	Elementary Mechanics
	5th.	.....	.....	.....
	6th.	Shop Work and Drawing.....	Shop Work and Drawing.....	Shop Work and Drawing.....
SOPHOMORE.	1st.	.....	Eng. Hist. and Lit.....	English Hist and Lit.....
	2d.	Struct. & Microscop. Botany ..	.....	.....
	3d.	Geometry	Plane Trigonometry.....	Trigonometry and Surveying
	4th.	General Chemistry.....	General Chemistry.....	Gen. Chem. & Laboratory
	5th.	Electricity.....	Heat.....	Physical Laboratory Work.....
	6th.	Drawing and Shop Work.....	Drawing and Shop Work.....	Drawing and Shop Work.....
JUNIOR.	1st.	Analyt. Chemistry, Qual.....	Analyt. Chemistry, Qual	Analyt. Chemistry, Quant.....
	2d.	Analytical Geometry.....	Analyt. Geom. and Calculus..	Calculus
	3d.	German.....	German.....	German.....
	4th.	.....	.....	German.....
	5th.	Geology.....	Geology.....	.....
	6th.	Drawing .....	.....	Mineralogy
SENIOR.	1st.	.....	.....	.....
	2d.	German.....	German.....	German.....
	3d.	Astronomy.....	Astronomy	Constitutional Law.....
	4th.	.....	Political Economy.....	.....
	5th.	Assaying and Mining.....	Ind. Chemistry, half term, Ethics, half term.....	Ethics and Ev. Christianity..
	6th.	Analyt. Chemistry, Quant.....	.....	An. Chem., Soils and Plants..

COURSE FOR BACHELOR OF LETTERS.

CLASSES.	Hours of Recitation	FIRST TERM.	SECOND TERM.	THIRD TERM.
FRESHMAN.	1st.	Algebra.....	Algebra and Geometry.....	Geometry.....
	2d.	Physiology.....	Zoology	Botany
	3d.	English	English	English.....
	4th.	.....	.....	.....
	5th.	Latin or French.....	Latin & R. Hist. or French...	Latin & Rom. Hist. or F'ch....
	6th.	Shop Work and Drawing.....	Shop Work and Drawing.....	Shop Work and Drawing.....
SOPHOMORE.	1st.	English.....	English.....	English.....
	2d.	Latin or French.....	Latin or French.....	Latin or French.....
	3d.	Geometry	Plane Trigonometry.....	Trigonometry & Surveying....
	4th.	.....	.....	.....
	5th.	Geology.....	Geology.....	Mineralogy.....
	6th.	Drawing and Shop Work.....	Drawing and Shop Work.....	Drawing and Shop Work.....
JUNIOR.	1st.	.....	.....	.....
	2d.	Analytical Geometry.....	Annalyt. Geom. & Physics....	Physics and Astronomy.....
	3d.	Fine Arts.....	Fine Arts.....	Fine Arts.....
	4th.	General Chemistry, 4.....	General Chemistry, 4.....	Logic, 4.....
	5th.	English, 3.....	English, 3.....	English, 3
	6th.	Latin or German.....	Latin or German	Latin or German.....
SENIOR.	1st.	Latin or German.....	Latin & Roman Lit. or Ger....	Latin or German,.....
	2d.	Fine Arts.....	Fine Arts.....	Fine Arts.....
	3d.	.....	.....	Constitutional Law.....
	4th.	.....	Political Economy, 4.....	.....
	5th.	Psychology.....	Psychology and Ethics	Ethics and Ev. Christianity....
	6th.	Anglo-Saxon.....	Anglo-Saxon, 3	Anglo-Saxon and Gothic.....

Grammar and prose composition are taught throughout the course in each language.

LANGUAGE COURSE FOR BACHELOR OF ARTS.

CLASSES.	Hours of Recitation.			
		FIRST TERM.	SECOND TERM.	THIRD TERM.
FRESHMAN.	1st.	Algebra.....	Algebra and Geometry.....	Geometry.....
	2d.	.....	.....	.....
	3d.	English	English.....	English.....
	4th.	Greek, Xenophon, or French	Greek, Xenophon, or French	Greek, Lysias, or French.....
	5th.	Latin, Cæsar or Nepos.....	Latin, Virgil & Roman Hist...	Latin, Virgil, and Rom. Hist
	6th.	Shop Work and Drawing.....	Shop Work and Drawing.....	Shop Work and Drawing.....
SOPHOMORE.	1st.	English.....	English	English.....
	2d.	Latin, Cicero's Orations.....	Latin, Odes to Horace.....	Latin, Livy.....
	3d.	Geometry	Plane Trigonometry	Trigonometry & Surveying...
	4th.	Greek, Herodotus, or French.	Greek, Homer, and Greek History or French.....	Greek, Homer, and Greek History or French.....
	5th.	.....	.....	.....
	6th.	Drawing and Shop Work.....	Drawing and Shop Work.....	Drawing and Shop Work.....
JUNIOR.	1st.	.....	.....	.....
	2d.	Analytical Geometry.....	Analyt. Geom. and Physics...	Physics and Astronomy.....
	3d.	Greek, Demosthenes, or Ger..	Greek, Euripides, or Ger...	Greek, Thucydides, or Ger...
	4th.	General Chemistry, 4.....	General Chemistry, 4.....	Logic, 4.....
	5th.	English, 4.....	English, 3.....	English, 3.....
	6th.	Latin, Livy, 3.....	Lat., Sat. & Epist. of Hor., 3..	Latin, Tacitus, 3.....
SENIOR.	1st.	Latin, Cicero and Juvenal....	Latin, Juvenal & Rom. Lit. 3...	Greek, Plato, and Greek Literature or German.....
	2d.	Greek, Demosthenes, or Ger..	Greek, Sophocles, or German	.....
	3d.	.....	.....	Constitutional Law.....
	4th.	.....	Political Economy, 4.....	.....
	5th.	Psychology.....	Psychology and Ethics.....	Ethics and Ev. Christianity..
	6th.	Anglo-Saxon.....	Anglo-Saxon.....	Anglo-Saxon and Gothic.....

Grammar and prose composition are taught throughout the course in each language.

HIGH SCHOOL DEPARTMENT—LANGUAGE COURSE.

YEARS.	FIRST TERM.	SECOND TERM.	THIRD TERM.
FIRST.	Eng. Gram. and Comp'n..... Arithmetic..... U. S. History.. Reading and Spelling Latin { Gildersleeve's Gram. Jones's 1st Lessons..... Drawing and Shop Work.....	Eng. Gram. and Composition... Arithmetic U. S. History Reading and Spelling Latin Grammar and Lessons.... Drawing and Shop Work.....	Eng. Gram. and Comp'n..... Arithmetic..... U. S. History..... Reading and Spelling..... Latin Grammar and Lessons.. Drawing and Shop Work.....
SECOND.	Eng. Analysis and Comp'n..... Algebra Latin { Grammar, Composi- tion and Reader El. Chemistry or Greek, 3..... Elocution, 2..... Drawing and Shop Work.....	Eng. Analysis and Comp'n Algebra and Geometry Latin (Cæsar or Curtius) El. Physiology or Greek, 3 Elocution, 2..... Drawing and Shop Work.....	Eng. Analysis and Comp'n.... Geometry..... Latin (Cæsar or Curtius)..... El. Botany or Greek, 3..... Elocution, 2..... Drawing and Shop Work.....

SHORT NORMAL COURSE.

FIRST.	Eng. Grammar and Comp'n.... Arithmetic U. S. History.. Reading and Spelling..... Methods of Teaching..... Physical Geography..... Drawing and Shop Work.....	Eng. Grammar and Comp'n.... Arithmetic U. S. History..... Reading and Spelling..... Methods of Teaching..... Elementary Physics..... Drawing and Shop Work.....	Eng. Grammar and Comp'n.... Arithmetic U. S. History Reading and Spelling..... Methods of Teaching..... Elementary Physics..... Drawing and Shop Work.....
SECOND.	Eng. Analysis and Comp'n..... Algebra..... Elementry Chemistry, 3 Elocution 2..... Pedagogy Drawing and Shop Work.....	Eng. Analysis and Comp'n..... Algebra and Geometry..... El. Pysiology, 3..... Elocution, 2..... Pedagogy..... Drawing and Shop Work	Eng. Analysis and Comp'n..... Geometry Elementary Botany, 3 Elocution, 2..... Pedagogy Drawing and Shop Work.....

The satisfactory completion of the above course will entitle the student to a Certificate of Proficiency in the branches taught in the District Schools.

BUSINESS COURSE.

YEARS.	FIRST TERM.	SECOND TERM.	THIRD TERM.
FIRST.	English Gram & Comp'n.... Arithmetic..... U. S. History..... Reading and Spelling..... Physical Geography..... Drawing and Shop Work....	English Gram. & Composition..... Arithmetic U. S. History..... Reading and Spelling..... Book-keeping..... Drawing and Shop Work.....	English Gram. & Comp'n... Arithmetic U. S. History..... Reading and Spelling..... Book-keeping Drawing and Shop Work...
SECOND.	English Analysis & Comp... Algebra..... Book-keeping..... { Elementary Chemistry 3 { Elocution 2..... Drawing and Shop Work....	English Analysis & Composition.... Algebra and Geometry..... Book-keeping 3. Commercial Law 2..... { Elementary Physiology 3..... { Elocution 2..... Drawing and Shop Work.....	English Analysis & Comp'n Geometry..... Book-keeping 3. Commer- cial Law 2..... { Elementary Botany 2.... { Elocution 2..... Drawing and Shop Work...

The satisfactory completion of the above course will entitle the student to a diploma, conferring the distinction, Graduate in Business Science.

In all courses of study, original orations and essays will be periodically required of the Senior and Junior classes, and elocutionary exercises of the Sophomore and Freshman classes. Similar exercises may be required of the High School and Grammar School classes, at the discretion of the Faculty.

OUTLINE OF STUDIES.

PSYCHOLOGY, ETHICS, SOCIOLOGY, AND EVIDENCES OF CHRISTIANITY.

PRESIDENT EDGAR.

These important studies are taught inductively, no theory or doctrine being urged for acceptance which is not based upon a philosophical induction from the facts of consciousness. The student is taught to subject every statement of fact or principle to the test of his own experience. The fullest and freest discussion of opposing views is encouraged.

TEXT AND REFERENCE BOOKS.

Psychology—Bascom, Mahan, Porter, Sir William Hamilton.

Ethics—Alexander, Dagg, Bascom, Porter, Calderwood.

Sociology—Lectures.

Evidences of Christianity—Alexander, McIlwain, Butler.

ANCIENT LANGUAGES.

PROF. WILLIS.

The subjects taught in this department are the Latin Language and Literature and the History of Rome, the Greek Language and Literature and the History of Greece. Authors are read in the order of their difficulty, and neat written translations are required at stated intervals. The grammar and idioms of these languages are carefully studied and compared with those of English and other languages.

Marked attention is paid to the rendering of English into Latin and Greek. In the lower classes the best manuals for Latin and Greek composition are used; for the higher classes carefully graded exercises are prepared by the professor.

Due prominence is given to the study of the Latin and Greek metres. The grammars are made the basis of this instruction, but fuller explanation is given in lectures.

LATIN.

Freshman Class: Gildersleeve's Grammar, Jones' Latin Prose Composition, Cæsar (Greenough) 2 Books, or Nepos (C. & S.) 35 pages, Virgil (Greenough) 3 Books of Aeneid and Selections from Eclogues, Smith's Smaller History of Rome.

Sophomore Class: Harkness' Grammar, Harkness' Prose Composition, Cicero's Orations (Harkness) 50 pages, Odes of Horace (MacLeane), Livy (Lincoln) 60 pages.

Junior Class: Harkness' Grammar, Harkness' Prose Composition, Original Exercises, Livy 40 pages, Satires and Epistles of Horace, Tacitus (Tauchnitz).

Senior Class: Harkness' Grammar, Original Exercises, Cicero's Moral Works, Juvenal, (Leverett or MacLeane), Quackenbos's Roman Literature.

Books of Reference: Harper's Latin-English Lexicon, White's English-Latin Lexicon, Classical Dictionary, Classical Atlas, Zumpt's, Madvig's and Roby's Latin Grammars.

Other authors may occasionally be substituted for those above when a change seems beneficial: (*e. g.*) Sallust, Ovid, Catullus, Tibullus, Propertius, Terence, Pliny.

GREEK.

Freshman Class: Goodwin's Grammar, Jones's Greek Prose Composition, Xenophon's Anabasis (Goodwin) 3 Books, Lysias (Stevens) 2 Orations.

Sophomore Class: Goodwin's Grammar, Jones's Prose Composition, Lysias, Herodotus (Mather) 40 pages, Homer's Iliad (Pratt and Leaf) 3 Books, Cox's Smaller History of Greece.

Junior Class: Goodwin's Grammar Original Exercises, Demosthenes' Phillippics or Olynthiacs, Euripides 2 Plays, Thucydides 1 Book.

Senior Class: Goodwin's Grammar, Original Exercises, Demosthenes De Corona, Sophocles 2 Plays, Plato, Quackenbos's Greek Literature.

Books of Reference: Liddell and Scott's Greek-English Lexicon (7th Oxford Edition), Yonge's English-Greek Lexicon, Classical Dictionary, Classical Atlas, Goodwin's Moods and Tenses, Hadley's or Curtius's Grammar.

ENGLISH, FRENCH, GERMAN AND MODERN HISTORY.

PROFESSOR EDWARDS.

After having been thoroughly drilled in English Grammar and Analysis in the art of Composition, in the Preparatory Department, the student, in the Collegiate Department, is introduced to Elementary Rhetoric, with the object of teaching him to express his thoughts with elegance as well as accuracy; and is, subsequently, advanced to its higher treatment as the Science of Discourse. He is then ready to enter with profit and pleasure upon the study of the History of English Literature, and of the master-pieces of English Composition.

The senior year is devoted to the study of Anglo-Saxon, without which no English course is complete. Throughout the course great attention is paid to carefully graded exercises.

Freshman Class: Morris's Historical English Grammar, Bain's Rhetoric, Abbott's "How to Write Clearly," Lectures on the Science of Rhetoric. Bi-weekly exercises will be written, requiring a thorough reading of the following books: Longfellow's Evangeline, Last Days of Pompeii, David Copperfield, Idyls of the King, Macaulay's Essays.

Sophomore Class: Welsh's English Literature, Johnson's English History. Bi-weekly exercises, as above, based on the following course of reading: Lady of the Lake, Childe Harold, Ivanhoe, Froude's History of England.

Junior Class: Hale's Longer English Poem's, Peile's Philology, Morris's Outlines of English Accidence, Hamlet, Chaucer's Prologue, Morris and Skeat's Specimens of Early English. Following course of reading as basis for exercises: Bacon, Shakespeare, Spencer, Extracts from Ruskin.

Senior Class: Sweet's Anglo-Saxon Primer, Cook's Siever's Anglo-Saxon Grammar, Beowulf, Andreas' Handy Anglo-Saxon Dictionary, Lectures on Comparative Philology. Exercises, as before, on Milton's Areopagitica, Paradise Lost, Green's Making of England, Earle's History of Anglo-Saxon Literature, Chaucer.

FRENCH AND GERMAN.

Two years (five hours per week) are devoted to each of these languages. Conversation forms an essential element of the courses. The language taught will be used as the medium of communication in the class, and every effort will be made to enable the student to speak it fluently and correctly. The idea is to combine the "natural method" with the grammatical study necessary to a really useful knowledge of any language. French is put in the Freshman and Sophomore years, German in the Junior and Senior.

Freshman Class: Worman's First Book, Worman's Second Book, Worman's Grammaire Francaise, Saintsbury's Primer of French Literature, Etude Progressive de la Langue Francaise, Roman d'un Jeune Homme Pauvre, Voyage de Monsieur Perichon.

Sophomore Class: Eugene's Comparative Grammar, Worman's Grammaire, Harrison's Syntax, Petite Historie du Peuple Francais, Brachet's Historical Grammar, Le Cid Andromaque, L' Avare, La Henriade, Gasc's Dictionary, Worman's Echo de Paris.

Junior Class: Worman's First German Book, Worman's Second German Book, Worman's Complete Grammar, Whitney's Reader, Conant's Primer of German Literature, Einer Muss Heirathen, Zriny.

Senior Class: Whitney's Grammar, Brandt's Grammar (for reference), Wallenstein, Emilia Galotti, Reisebilder, Schiller's Lyrics, Egmont, Lectures on History of Germany.

In all these classes constant oral and written translations from English into the foreign language will be required.

MODERN HISTORY.

This subject, as seen by text books above, will be taught in connection with the development of the literatures of the above three languages and in the classes studying the languages.

PURE MATHEMATICS AND LOGIC.

PROF. MURFEE.

MATHEMATICS.

This subject should be taught both practically and logically, serving in scientific investigations and mental discipline. It is not enough to find "answers," but the deductions must be based on established principles. First, the pupil performs the work in imitation of the teacher or author; then comparing facts learned he reasons on the subject, consults the text and book of reference, makes the deduction, and applies the law to new cases. The power of original investigation and the faculty of invention are thus strengthened, and the student, by the inductive process of combining known principles and making new deductions, can anticipate the author in his demonstrations.

For admission into the Freshman Class, the applicant must pass satisfactory examination in Arithmetic and in Algebra to Quadratic Equations. It is desirable that he should have studied three books in Geometry, and that he should have been thoroughly drilled in Mental Arithmetic.

All students must supply themselves with drawing instruments; for much attention is paid to original investigations, in which at least the dividers and protractor are essential.

Text-Books and Books of Reference—Algebra: Robinson's University, Wentworth's Complete, Wells' University. *Geometry:* Wentworth, Loomis, Welch and Chauvenet. *Trigometry and Surveying:* Schuyler, Wells, and Wentworth. *Analytical Geometry:* Loomis and Todhunter. *Calculus:* Loomis and Church.

LOGIC.

Logic is taught, both from text-books and by lectures. Students are required to show its application in various scientific investigations. Essays from different authors are analyzed and discussed, with a view to the appreciation of sound reasoning and the

detection of fallacies. Original discourses are required of students to impress the principles taught. In this way a subject, ordinarily regarded as dry, is made of the liveliest interest.

Text Books and Books of Reference: Jevon-Hill, McCosh, Mill and Hamilton.

APPLIED MATHEMATICS—PHYSICS, ASTRONOMY, CIVIL AND MECHANICAL ENGINEERING.

PROF. WHITHAM.

PHYSICS.

This course, which embraces recitations upon text-books, lectures, class illustrations, and experiments in the Physical Laboratory, is the basis of all scientific and technical instruction.

During the Freshman year a term is devoted to General Physics, a term to elementary experimentation in the Laboratory, and a term to Elementary Mechanics. In the Sophomore year a term is given to Electricity from an analytical standpoint, a term to the study of Heat and Thermodynamics, and a term to advanced Laboratory practice. The course in Laboratory practice consists in the manufacture of new apparatus, repairing apparatus, the deduction of laws, and the testing of principles taught. Students will elect the branch of physics they desire to pursue in the Laboratory, and will be required to keep a carefully written note book.

Text and Reference Books: Olmstead's College Philosophy, Peck's Elements of Mechanics, Thompson's Electricity and Magnetism, Larden's Heat, Ganot's Physics, Pickering's Physical Measurements.

ASTRONOMY.

A term is devoted to the study of Descriptive Astronomy. This is made interesting and profitable by the use of maps, globe, astral lantern, equatorial telescope, sextant and solar compass.

Scientific and engineering students will devote one term to Analytical Astronomy.

Text and Reference Books: Olmstead's College Astronomy, Norton's Astronomy, Pickering's Physical Measurement, Coffin's Navigation and Nautical Astronomy, and the Nautical Almanac.

CIVIL ENGINEERING.

This course is based on the belief that a Civil Engineer should be a draughtsman and mechanic as well. That he may be a draughtsman, he is required to devote four years to topographical, mechanical, architectural, linear and isometrical perspective and free hand drawing. In order that he may be a mechanic, he is required to devote two years to shop work. The course is also based on the idea that he should be a *theoretical* and *practical* engineer. In order that he may combine these qualities, the course is arranged to give him the maximum amount of field work allowable, and textbooks from the best sources. He is required to make a practical application of all principles taught. It is intended that a graduate in this course shall be able to compete with those from the eastern Institutes of Technology.

In order to accomplish this end, engineering is not only the major, but the minor course pursued after the Freshman year.

The course consists of recitations, lectures, drawing, field and shop work, civil engineering, and a short study of mechanical, mining, sanitary and hydraulic engineering.

Reference may be had to the course leading to the degree of C. E., described in this catalogue.

Text and Reference Books: Gillespie's Land Surveying and Higher Surveying, Surle's Field Engineering, Haupt's Topography, Smith's Topographical Drawing, Rankin's Civil Engineering and Applied Mechanics, Wheeler's Civil Engineering, Mahan's Civil Engineering, Alexander and Thompson's Elementary Applied Mechanics, Perry's Steam Engine, Haupt's Engineering Specifications and Contracts, Church's Descriptive Geometry, etc., Cottrell's Applied Mechanics.

MECHANICAL ENGINEERING.

This course is presented here for the first time, and was made possible only by the erection of work-shops during the past year. It is based on the belief that a mechanical engineer should be a

mathematician, draughtsman, mechanic, and a thoroughly practical man, able to compete with graduates from Institutes of Technology. The course leading to the degree of Mechanical Engineer (explained elsewhere in this catalogue), compares favorably with any proposed by older institutions. It is expected that this new course will supply engineers who can take the lead in developing the great resources of the State of Arkansas.

Text and Reference Books: Shelley's Work-Shop Appliances, Church's Descriptive Geometry, Woods and Stahl's Elements of Mechanism, Alexander and Thompson's Applied Mechanics, Rankine's Applied Mechanics, Perry's Steam Engine, Rankine's Steam Engine and Other Prime Movers, Rankine's Machinery and Mill Work, Shock's Steam Boiler's, Thurston's Friction and Lubrication, The Steam Engine by Marks, Cotterell's Applied Mechanics.

MINING ENGINEERING.

Students desiring to take this course can be provided for, as the first two years will be embraced in the civil and mechanical engineering course. It is proposed to add this course during the next session.

CHEMISTRY, MINERALOGY, GEOLOGY AND BIOLOGY.

PROF. PURINTON.

CHEMISTRY.

This course embraces inorganic, organic, analytical, agricultural and industrial chemistry, including the Chemistry of Light and Photography.

Instruction will be given by means of text-books, lectures, class illustrations and laboratory practice. The elementary principles of chemistry and chemical philosophy will be thoroughly taught and the facts of chemistry will be impressed by copious experiments performed by the student. Blowpipe analysis, qualitative and quantitative analysis, assaying and metallurgy, will be taken up in proper order. After completing a suitable course of laboratory practice, the further practical study of chemistry by the student will be determined by the object he may have in view.

Text and Reference Books : Elliott and Storer, Appleton's Series, Clowe, Harcourt, Fresenius, Lupton, the Johnsons, Church, Ricketts, Phillips, Wagner, Wurtz, Miller, Crook & Rohrig, Watt, Liebig.

MINERALOGY.

The study of Mineralogy includes the study of Crystallography with the occurrence, properties, forms and uses of the principal minerals. Determinative Mineralogy forms the most important part of the course, and is studied practically with the aid of lens, bagnet, blowpipe and simple analysis. Especial attention is given to the determination of the minerals and the assaying of the ores of the State.

Text and Reference Books : Dana, Bush, Plattner.

GEOLOGY.

This includes Lithological, Historical and Dynamical Geology. Prominence will be given to facts having an economic bearing. Especial attention will be paid to the formation of soils and deposits of valuable minerals in Arkansas. Field excursions form part of the regular course.

Text and Reference Books : LeConte, Dana, Geike, Lyell.

BIOLOGY.

This includes Botany, Anatomy and Physiology, Zoology and Entomology. Under *Botany* will be studied the structure, analysis and classification of plants—their geographical distribution and importance; favorable and unfavorable condition for life and growth; enemies, food, etc. In connection with the study of Botany, each student is required to collect, preserve, correctly classify and label, and deposit in the museum an herbarium of Arkansas plants.

Anatomy and Physiology will embrace the study of human anatomy, physiology and hygiene, including such subjects as digestion and foods, poisons and antidotes, respiration and ventilation, exercise and clothing. Under *Zoology* will be studied the classification and distribution of the forms of life upon the globe. Comparative Anatomy and Physiology, as preparatory to the study of stock-breed-

ing, will receive especial attention. In connection with the study of Zoology, instruction in practical Taxidermy and Skeleton mounting is given.

Entomology will be studied with special reference to its economic relations with agriculture and horticulture. In the biographical sciences, instruction will be given by text-book and lectures, but all students will be required to perform simple dissections and work with the microscope; prepare, mount and preserve specimens properly classified and labeled. The University is well equipped with microscopes, specimens and models.

Text and Reference Books: Gray, Bessey, Chapman, Martin, Huxley. Dalton, Carpenter, Flint, Darwin, Packard, Harris, Draper.

During the past year the Chemical, Mineralogical and Biological Laboratories have been greatly developed by the addition of a gas supply, vacuum pumps, assay, combustion and blast furnaces, water sinks and taps, platinum and porcelain goods, choice chemical reagents, a cabinet of fine and rare minerals, comprising some valuable ores and native metals, an herbarium of more than 2500 plants, thirty-five stuffed and mounted birds, and one hundred preserved native bird skins.

A few specimens of Reptilia and Insectivora, and several fossils, minerals and native ores have been added. A full set of photographic instruments and appliances are in use in the Chemical Laboratory for illustration in the study of the chemical properties of light.

Special attention will be given during the coming year to Microscopic Photography and the preparation of lantern slides. Instruction in Practical Photography will be given privately, at the discretion of the Faculty, to those who may desire it.

NORMAL DEPARTMENT.

PROFESSOR HOWELL.

The design of the Normal Department is to train teachers for the schools of the State. It will be the aim, in future, to make this one of the prominent features of the University, and so to co-ordinate its instruction to both the Preparatory and the Collegiate Departments as to make its benefits accrue to all grades of teachers, from the primary teacher to the college professor. The aims will be :

1. To lead pupils to think and investigate for themselves.
2. To train them in the best methods of imparting instruction without destroying their individuality.
3. To teach them how to organize, grade and discipline the various kinds of schools.
4. To give them a knowledge of school law, and especially of the duties of teachers as officers of the State.
5. To impart to them a valuable summary of the history of education.
6. To teach them the fundamental principles of Psychology and of the science of human conduct.

Text and Reference Books: Baldwin's and Kellogg's School Management, Parker's Talks on Teaching, Hewett's Pedagogy, The Practical Teacher, Volume VIII, Sweet's Methods, Thring's and Page's Theory and Practice of Teaching, Browning's History of Education, Tate's Philosophy of Education, DeGraff's School-Room Guide, Bain's Education as a Science, Wickersham's School Economy and Methods, Compayre's History of Pedagogy.

POLITICAL SCIENCE.

Political Economy and Constitutional Law are embraced under this head.

The aim is to give a succinct statement of the undisputed principles of Political Economy, and to discuss conflicting views with all possible fairness.

The Constitution of the United States and of Arkansas, will be carefully studied, and an effort made to form a correct idea of the principles upon which our government was founded by a careful study of its history and institutions.

The work of this department will be distributed among the different Professors until it shall be feasible to create a distinct chair.

HIGH SCHOOL AND PREPARATORY STUDIES.

Students are not admitted into the lowest Preparatory class until they are thoroughly familiar with the fundamental principles of Arithmetic, viz: Addition, Subtraction, Multiplication and Division, and also Common Fractions. In Reading, they must be able to understand and intelligently render specimens of the grade of the Fourth Reader; must have a knowledge of Primary English Grammar, Primary Geography, the rudiments of Penmanship, and the spelling of ordinary words of the grade of the Fourth Reader. These qualifications are the test of admission at the beginning of the session; those applying later will be admitted only on the grade of the class.

In giving instruction in Reading, the aim is, first to develop in the student a full, complete and definite idea of the meaning of the sentence; second, to obtain from him a natural, easy and graceful expression of the entire thought, as embraced in the sentence.

Spelling is required of students throughout the entire course, and an endeavor made to secure the accurate use of letters and other marks in the formation of words, and correct pronunciation.

English Grammar is taught by requiring the students to form sentences of their own, as well as to analyze and parse those of others.

In the Preparatory Classes, the student is chiefly confined to the simple constructions, the more systematic treatment of grammar and analysis being reserved for the High School grades. Lessons in Composition are given in all classes.

In Arithmetic, processes precede principles, and the object is to obtain, first, a full understanding of methods, then accuracy in work, and finally rapidity.

Much importance is attached to Mental Arithmetic as a means for developing the power of Analysis and for strengthening the mind. Both oral and written exercises will be required daily.

In Commercial Arithmetic, the effort is made to make the instruction as practical as possible, so as to prepare the student for a correct understanding of every-day business transactions.

In Geography, the effort is to teach what is practically useful. With this in view, attention is chiefly given to the natural features of the earth, its climatic conditions, the resources and products of the various countries, the great thoroughfares of commerce, and the localities of chief general interest. Map drawing is essential to this course.

Daily exercises in Penmanship are required.

In the first year of the High School course, United States History is substituted for Geography and Latin is begun by those who propose a Classical course.

Classical students are thoroughly drilled in the Latin Grammar and are carried through a Reader and two books of Cæsar by the close of the second or Sub-Freshman Year. Greek is begun in the second year, which is devoted to a mastery of inflections, and elementary construction.

Students are exercised by frequent translations from English into Greek and Latin.

Algebra and Geometry are begun in the second year of the High School course.

In Algebra, students are thoroughly drilled in the elementary principles and required to master everything to equations of the second degree.

In Geometry, the elementary principles are taught both as a basis of instruction in the Industrial Art and in preparation for Collegiate work.

Free-hand Drawing forms a part of the regular curriculum and is begun in the lowest preparatory class. Drawing has a disciplinary, as well as a practical value, and also tends to refine the taste and polish the mind.

Elementary Natural Science is taught in those courses of the High School which do not embrace the classics. The experience of the past session in giving instruction in this line of study has been most satisfactory. The classes have been taught by the Professor of Chemistry and Biology, who has sought to give such an outline of scientific facts and principles as would prove valuable both to those students who propose to take a fuller course, and to the larger number who drop out of school before reaching the Collegiate Department.

Text Books: Barnes' New National and Swinton's Readers, Ray's Practical Arithmetic, Thompson's Mental Arithmetic, Barnes' Higher Arithmetic, Mitchell's New Intermediate Geography, Greene's Grammars and Analysis, Chittenden's Composition, Wentworth's Algebra, Wentworth's Geometry, Gildersleeve's Latin Grammar, Jones' First Lessons in Latin, Gildersleeve's Latin Reader, Goodwin's Greek Grammar, Whiton's Three Months' Preparation *for reading* Xenophon.

MUSIC DEPARTMENT.

PIANO FORTE.

This course will require six years for completion. Should the pupil possess marked talent and unceasing energy, it may be finished in less time.

FIRST YEAR.

Studies of the first principles of music, five-finger exercises, movement, scales, and such studies as will prepare the pupil for light classic composition of the Old Masters.

SECOND YEAR.

Practical exercises of Duvernoy, Czerny and Bach; introduction of such new movements of Liszt and Chopin as will prepare the pupil for work exclusively classic.

THIRD AND FOURTH YEARS.

Studies of Clementi, Heller and Bach, with especial attention to touch; introduction of more advanced movements of Liszt, that the pupil may be enabled to contend successfully with the moderately difficult classic composition.

FIFTH AND SIXTH YEARS.

Advanced studies of Beethoven, Clementi and Cramer, and difficult compositions of Schumann, Liszt, Chopin, Hayden, etc.

VOCAL CULTURE.

FIRST YEAR.

Will be devoted exclusively to forming of register and to producing evenness and natural tones of voice in register. Bassini's Art of Vocalization will be the theory used.

SECOND AND THIRD YEARS.

Pronunciation, timbre, science and art of breathing (diaphragm and clavicular), and art of phrasing; studies of Conconi and Bassini, with light selections from the Operas.

FOURTH AND FIFTH YEARS.

Colature, Messa di Voco, Portamento, and other vocal embellishments; studies of Garcia, Conconi, Rossini, etc., with the more difficult selections from the operas and classic composition of Mendelssohn and others.

SIXTH YEAR.

Will embrace the first course in Opera Dramatic.

 VIOLIN.

FIRST YEAR.

Practice of bowing, finger exercises, Manzas' Instructor.

SECOND YEAR.

Etudes of Dancla and arrangements from the Operas.

THIRD YEAR.

Kaiser's Etudes, Sonatas by Hayden, Schubert, etc.

FOURTH YEAR.

Krautzer's Etudes and compositions by De Beriot, Kreutzer, etc.

 TERMS.

ONE LESSON PER WEEK.

Piano-forte.....	\$ 9 00	per term.
Voice Culture.....	10 00	"
Violin or Guitar.....	9 00	"
Thorough Bass and Harmony	8 00	"
Theory and Composition.....	11 00	"
Use of Piano one hour every day.....	3 50	"

For two lessons per week the rates are double the above, except for use of piano.

One-half of tuition must be paid in advance, balance at end of term.

No deductions will be made on account of absence from recitations except in cases of prolonged sickness; then the loss will be shared equally between student and teacher.

By a resolution of the Board of Trustees, at its recent meeting, the Students of the Music and Art Departments will hereafter be required to matriculate and pay the usual fees, and to be subject to the regulations applicable to other students.

INDUSTRIAL ART STUDIES.

These studies embrace drawing, designing, modeling, working in wood, metal, clay and other substances. They teach the art of producing an infinite variety of objects, both useful and ornamental ; in short, *whatever lies at the foundation of the industries dependent alone upon human invention, skill and handiwork.*

It is surprising that it has been only in the last few years that the importance of training the eye, hand and judgment of youth in apprehending and working material things for pleasure and profit, has begun to be appreciated ; and that our systems of education are being remodeled to include the aims of learning "to do" something, as well as "to know" something.

How this double aim can best be accomplished, is the great educational problem of the day. The good results that have already been realized from the efforts made in Europe and in our own country, to solve this problem, are highly encouraging ; and it is confidently believed that the "New Education," in which manual training shall go *pari passu* with the intellectual and the moral, in all grades of schools from the kindergarten to the university, will be the education of the future.

Appreciating the importance of inaugurating a system of Industrial Art training in the Arkansas Industrial University—a training which was one of the leading objects set forth in the Act of Congress of 1862, endowing the Land Grant Colleges, the Board of Trustees, in January 1885, asked the legislature to appropriate \$10,000 for this purpose, but without success.

Notwithstanding the failure of the legislature to make the special appropriation asked for, the Board determined to make a beginning towards carrying out the object proposed, and accordingly set apart a portion of the regular annuity to provide instruction in manual exercises suited to both sexes. More than \$3,000 was expended in providing a shop and in equipping it with engine, boiler, shafting, gearing and a limited number of machines and tools

for working in wood and iron ; and nearly \$2,000 more, in securing an instructor in shop-work and one in drawing and handiwork for girls, and in supplying needful material and service.

As a necessary basis for all industrial art work, lessons in Free-hand Drawing were given throughout the session, to all the students, except the seniors. The efforts in drawing were creditable to a majority of the students, while some of them produced for the inspection of the Boards of Trustees and Visitors, original designs of great merit. The girls were taught needle work of various kinds with satisfactory results. The shop-work of the young men, though begun as late as March, was sufficient to give the limited number that could be taught, some insight into the initial processes in wood and iron work and in the use of machines and tools ; while it demonstrated the usefulness of the instruction and the feasibility of training the mind and muscles together for useful ends without detriment to the intellectual training to be attained by the usual methods and courses. At its recent meeting, the Board of Trustees appropriated \$1,000 for enlarging the shop so as to provide for the instruction of a larger number of students at one time, and \$350 for affording instruction for the girls in wood-carving and brass-work.

It is hoped that the encouraging results which have attended the efforts, made upon a limited scale, to build up an Industrial Art Department in the University, will lead our next legislature to appropriate an adequate sum to make this department compare favorably with those of other institutions which make it their object to train the whole man—mind and body for the highest usefulness.

AGRICULTURAL STUDIES.

There has scarcely been a year since the organization of the University when important "branches of learning," "related to agriculture," have not been taught; but it is freely admitted that but little has yet been done towards applying the principles of science to the solution of the practical problem involved in the successful cultivation of the soil. This has been chiefly due to the fact that from the close of the civil war up to a recent period, the finances of Arkansas were in too unsatisfactory a condition to justify the expenditure of the large sums necessary to provide adequately for giving varied practical instruction in this department. To have attempted this, would have required an outlay of money in arable land, buildings, stock, machinery and appliances for instruction, equal to the entire property investment of the University; while a much larger annuity than the Institution has ever received, would have been necessary to have maintained the establishment and to have provided the student labor required to make it a blessing to the masses. But could such an effort have been successfully made fourteen years ago, it would have necessitated the abandonment of all other department's of the State's educational work by which thought and culture are promoted and men fitted for other employments—a result which few would admit could be compensated for by the highest success attainable by scientific agriculture. But the Arkansas of to-day is quite a different State from the Arkansas of ten years ago. Its population has doubled and its wealth trebled in that short period; and the undisputed debt of the State is not so great that it need be a source of anxious concern. Two years ago the Board of Trustees of the University thought that the time had come when they might reasonably ask the Legislature for a liberal appropriation for the Agricultural Department; but they failed to secure the \$15,000 which was deemed necessary to enable them to make a favorable beginning towards supplying its needs. But notwithstanding this, the scheme has not been abandoned. Confident that the next Legislature cannot fail to make the needed appropriation, they have taken all the initial steps in their power to prepare

for the work to be accomplished. They have spent a considerable sum in fitting up a new laboratory and equipping it for the analysis of soils and fertilizers as well as for general instruction in chemistry. They have bought the Harvey collection of plants, fossils and minerals, representing the flora and mineral resources of the State, and have otherwise increased the facilities for instruction in the Biological department. They have authorized the Professor of Chemistry and Biology to put the farm in better condition, to plant out an orchard of trees and small fruits, to begin experimentation on a small scale in planting small plots in grains and grasses, and in cultivating the same by improved methods and with the aid of fertilizers of known chemical value. And though what has been done, and may yet be done during the growing season is but a mere beginning, they have determined to use their utmost endeavors to have the Agricultural Department developed upon a scale commensurate with the wants of the State, It remains to be seen what response will be made by the Legislature to a more importunate-call for the requisite means to go forward. Students who expect to adopt agriculture as a pursuit, are urged to enter upon the agricultural course marked out in the catalogue, relying upon the good sense and liberality of the people to supply all the practical as well as theoretical instruction they may need as they advance from class to class.

MILITARY DEPARTMENT.

The military officers of the University consist of the President, Commandant and such assistant professors as may be assigned to duty in this department by the President. The President is head of the department, and issues from time to time such general and special orders as he deems necessary to the efficiency of the military exercises and to the enforcement of order in the buildings and on the grounds.

The Commandant is charged with the details of the Military Department, and is responsible to the President for both drill and discipline.

This department is designed to impart to each male student not physically incapacitated to bear arms, theoretical and practical instruction in the school of the soldier, of the company, and of the battalion, and thereby furnish the State with a body of young men qualified to organize its militia.

Besides, the military drill is a superior health-giving exercise, and promotes physical development, manly carriage, neatness, precision, order, and a habit of obedience which is a valuable aid in the enforcement of discipline.

The entire body of male students is divided into companies, which are officered by cadets, selected for proficiency in drill, good deportment and scholarship. The cadet officers are regarded as assistants in the enforcement of discipline, and their orders, while on duty, are considered as duly authorized, and must be obeyed accordingly.

Cadet officers are expected and required to be examples in military deportment and general good conduct.

A neat uniform, with brass buttons and suitable trimmings, is required to be worn by all males.

Parents and guardians will save money by postponing the purchase of winter suits for their children and wards until they arrive at Fayetteville.

CADET OFFICERS.

STAFF.

T. H. HUMPHREYS, W. E. DICKSON,
1st Lieut. and Adjutant. *1st Lieut. and Quartermaster.*
 G. A. WARREN, *Sergeant Major.*

"A" COMPANY.

B. J. TILLAR, *Captain.* H. D. WILKINSON, *1st Lieutenant.*
 F. A. HIPPOLITE and A. B. STONE, *2d Lieutenants.*
 H. J. HALL, *1st Sergeant.* W. W. POWELL, *2d Sergeant.*
 D. C. B. AIKIN, *1st Corporal.* J. C. MCNEELY, *2d Corporal.*

"B" COMPANY.

J. H. BATES, *Captain,* A. V. GIBSON, *1st Lieutenant.*
 B. C. DUFFIE, *2d Lieutenant.*
 J. H. HOBBS, *1st Sergeant.* N. F. DRAKE, *2d Sergeant.*
 G. V. SKELTON, *1st Corporal.* S. A. DOWNES, *2d Corporal.*

COLOR GUARD.

LEE TREADWELL, *Color Sergeant.*

CORPORALS.

P. BOWLES, W. T. GUNTER, M. DANAHER, A. G. TAFT, W. E.
 DUNAWAY, J. T. VALENTINE, S. F. DOWELL.

BAND.

C. A. DAVIES, *First Sergeant and Drum Major.*
 E. L. PARKER, *Leader.*

MEMBERS.

F. O. ROBERTSON,	T. I. THORNTON,	C. E. FAULKNER,
M. DIBRELL,	F. W. REED,	J. L. REED,
W. L. REED,	W. J. SAVAGE,	J. C. VAUGHAN,
M. HULSE,	M. DEAN,	A. W. SHREVE,
J. B. BRICKNELL,	J. F. HARRIS.	

At the competitive drills during Commencement Week, "B" Company won the honor of carrying the Battalion Colors during the session of 1886-87, and the Cadet Officers of the Battalion presented a gold medal to Cadet J. H. Gaines for being the best drilled private.

POST GRADUATE COURSES.

Requirements for the Degree of Master of Arts (M. A.)

Applicants for this degree must have previously taken the Degree of B. A. and in addition must take, at the University, for a full scholastic year, four daily studies appointed by the faculty.

Requirements for the Degree of Master of Science (M. S.)

Applicants for this degree must have previously taken the Degree of B. S., and in addition must take, at the University, for a full scholastic year, four daily studies appointed by the faculty.

Requirements for the Degree of Philosophy (Ph. D.)

1. This degree will be conferred for distinguished attainments, as shown by examination and thesis, in any one of the five following languages: Latin, Greek, German, French and English, together with subordinate attainments in two others of the five; or, for distinguished attainments in any one principal and two subordinate of the following sciences: Chemistry, Physics, Geology, Biology; or, for distinguished attainments in Philosophy or in Pure and Applied Mathematics.

2. This degree shall be open to persons who have received the Degree of B. A. or B. S., at this or other reputable institutions; or C. E., or M. E. from this institution; or to any person who can, by a thorough examination, show attainments equal to those indicated by these degrees.

3. No applicant shall be admitted to examination for this degree before two full scholastic years from the date of his admission to the course, shall have passed. The last of these two years must be passed by the candidate in resident study at the University.

4. Applicants for this degree must state in their application what particular line of study they wish to pursue.

5. A thesis, showing original research shall be required of every applicant, the subject of which shall be announced and passed

upon by a committee of the faculty at least one year before the time set for the final examination, and the thesis itself must be presented to the committee two months before admission to the examination. Twenty-five copies of the approved and printed thesis shall be placed in the University Library.

6. All applicants for this degree, who have previously taken the B. S., M. S., C. E., or M. E. Degree, must by the end of the first year of the course, be sufficiently conversant with French and German to read with ease any scientific work written in these languages.

DISTINCTIONS

CONFERRED AT COMMENCEMENT, JUNE 10, 1886.

Upon the recommendation of the Faculty, the following degrees were conferred by the Board of Trustees:

Bachelor of Arts—Misses Mai Middleton, Mary Leverett, Sara Mulholland, and Messrs. B. J. Tillar and James H. Bates, members of the Senior Class.

Doctor of Philosophy—J. C. White, Professor of Geology and Mineralogy, University of West Virginia, and Assistant Geologist U. S. Geological Survey.

The following students received diplomas in the Business Course:

Samuel F. Dowell, Benj. J. Mosley, Albert S. Brown, Wm. H. Johnson, John H. Gaines, Abner E. Northrop, John H. Sloan, Abner Webb and Robert D. Harris.

A gold medal, offered by B. H. Stone, of Fayetteville, for the best essay by any student on a subject selected by the faculty, was awarded by a committee of the Honorable Board of Visitors to F. P. Turner, of Franklin county.

A gold medal was awarded to Miss Ida Pace, of Fayetteville, by the Mathetian Society for the best essay submitted by the competitors for that honor.

GENERAL INFORMATION.

The aims of the University are set forth in the following sections of the Acts of Congress and of the General Assembly of Arkansas, under which it was established :

The Act of Congress of 1862, appropriating lands to establish colleges in the States, provides that all moneys derived from their sale "shall be inviolably appropriated by each State which may take and claim the benefit of this act, to the endowment, support and maintenance of at least one college, where the leading objects shall be, *without excluding other scientific and classical studies*, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts in such manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

(U. S. Statutes, Vol. 61, Stat. 7, Sec. 4.)

Our own General Assembly, in accepting the original grant and in creating the University, provides that the fund realized therefrom "shall be forever devoted and applied to the endowment and maintenance, under such laws or articles of incorporation as may be by the General Assembly hereafter provided, of an institution of learning to be styled 'The Arkansas Industrial University,' wherein shall be taught, *in addition to the usual course of study prescribed in universities*, the science and practice of Agriculture, the Mechanic Arts, Engineering and Military Science and Tactics." (Act of July 23, 1868.)

It was clearly the purpose of Congress in the act above quoted to provide for the maintenance of colleges whose leading objects should be "to teach such branches of learning as are related to Agriculture and the Mechanic Arts;" but the act as plainly provides that the course of instruction shall include "Military Tactics," and shall not exclude "other scientific and classical studies." It, therefore, admits of the organization of schools upon a broad University basis, provided their leading objects shall conform to the letter of the law

as already indicated ; for, when thus organized, will they most surely “promote the liberal and practical education of the industrial classes in the several *pursuits and professions of life*.” How they should be made to subserve the ends designed was wisely left to “the Legislatures of the States to prescribe.” In accepting our State’s quota of the land scrip, and in chartering the Arkansas Industrial University, the General Assembly evidently designed that the “usual course of studies prescribed in Universities” should be taught, though in addition thereto it provided for the other features mentioned in the closing sentence of the Act.

It is the purpose of the Board of Trustees to endeavor to develop the institution in accordance with the spirit of the above acts. The means at their command have not been adequate to the development of all the departments of instruction contemplated therein, or to the purchase of the fullest appliances for illustration and practice for those already embraced in its curricula ; but they believe that quite an advance has been made in the past two years in perfecting the organization and in promoting the efficiency of the institution, and that with the aid of liberal appropriations by the Legislature, it will soon bear favorable comparison with similar institutions in the older and wealthier States, in the advantages it shall offer for the training suited to the varied wants of its youth.

LOCATION.

The Arkansas Industrial University is located within the corporate limits of the town of Fayetteville, Washington county. The location is thought to be unsurpassed by any other locality in the State in salubrity of climate, beauty of surrounding scenery, fertility of soil, variety and perfection of agricultural and horticultural productions, and in the morality and intelligence of its people.

PROPERTY.

The property of the University consists of the proceeds of the munificent grant of land by Congress, the bonds of Washington county, and of the town of Fayetteville, the appropriations made by the State, and the University farm and lands—amounting in all to \$300,000 in value.

ACCESSIBILITY.

Students may reach Fayetteville from both the north and the south by daily trains on the Arkansas branch of the St. Louis & San Francisco Railroad, which now connects on the south with the Little Rock & Fort Smith Railroad at Van Buren.

Students, on arriving at Fayetteville, must report at once to the President of the University. No student will be allowed to recite in any class until properly enrolled, but will be held responsible for his conduct from the time of his arrival in Fayetteville.

CALENDAR FOR THE SCHOLASTIC YEAR 1886-87.

The session will commence on Wednesday, September 1, 1886, and close June 1, 1887.

WITHDRAWAL OF STUDENTS.

Parents, or guardians, who wish to withdraw their children or wards from the University, should write to the President of the Faculty, stating their wishes. Unworthy students sometimes deceive the Faculty by pretending that their parents desire them to return home. No honorable discharge will be given to a student under age, who is unable to produce the written application of his parent or guardian for his withdrawal, or if his number of demerits shall exceed the proportion of two hundred allowed during the session. Nor will an honorable discharge be given to a student, under censure of any kind, whether for neglect of duty, or other cause, even though he may have the consent of his parent or guardian for his withdrawal from the University.

RESTLESSNESS.

The greatest obstacle to-day, in the way of successful educational work, is the restlessness and lack of persevering pluck in American youth. We find that the vast majority of our students do not come to the University with any thought of remaining until graduation, and many think they have accomplished wonders by remaining a single term of three months. Those who exhibit such a deplorable lack of pertinacity in youth, can scarcely be expected to

succeed in after life. They will succumb under the first serious difficulty. Parents who yield to the importunities of their children to quit school, because of some discouragement, do thereby foster in them a weakness which must be fatal to all vigorous manhood and healthful development. We hope that the students who come up in September, will come with the determination to let no slight impediment turn them back from the path that leads to knowledge, honor and usefulness.

BOARDING HOUSES.

Students are required to board at such places as are approved by the Faculty, and are under the supervision of the President of the University. No change of boarding house will be allowed, except at the end of each term, unless under extraordinary circumstances, nor without the permission of the President.

If at any time the influence of a boarding house be found pernicious, boarders will be removed at the instance of the Faculty.

EXPENSES.

Board, including fuel, lights and washing, may be had with families living in or around Fayetteville at from \$12 to \$16 per calendar month. Day boarding is sometimes obtained at from \$8 to \$10 per month.

In order to lighten the expenses of students of limited means, the Board of Trustees, one year ago, authorized the Faculty to open a boarding house on the College grounds, where good substantial fare might be furnished to from forty to fifty boys at cost. To effect this purpose, the old Refectory was thoroughly repaired, and the dining room and kitchen furnished at the expense of the University. At the request of the faculty, one of the professors took charge of the establishment at the opening of the session, and under his careful supervision it was so conducted that good, substantial table board was furnished the students for less than \$8 per month. The house was full during the entire session, but it is to be regretted that it will not comfortably accommodate more than fifty students. The arrangement will be continued during the ensuing session. Stu-

dents who board on the grounds are expected to provide their own furniture, fuel and lights. Before entering the boarding house they are required to promise to conform to such regulations as to study, the preservation of order, visiting, leaving their quarters and the care of their rooms as may be prescribed by proper authority.

Our next Legislature will be asked to make an appropriation to build substantial brick dormitories and mess halls, with all modern conveniences, and with ample accommodations for the students of both sexes. It is hoped that the requisite means will be supplied to meet this want.

Hereafter, all students, whether in the Collegiate or Preparatory classes, who have not Normal or Beneficiary appointments, will be required to pay a tuition of \$30 per session of forty weeks—one-half at the beginning and the balance in the middle of the session.

All Normal and Beneficiary students, and all *new* students, on entering, are required to pay a matriculation fee of \$5.

No student will be enrolled till all fees are paid, and no tuition fees will be refunded, except in cases of sickness causing continuous absence of not less than six weeks.

Hereafter, the usual fee of \$5 will be charged those who receive regular diplomas, and \$2.50 to those who receive business diplomas.

POCKET MONEY.

The Faculty would advise parents to allow their sons but little pocket money. It has been well said in regard to students, that "a pocket full of money and a head full of sense are seldom found together." Money can be sent monthly for the payment of boarding and other necessary expenses. Postal orders can always be cashed at the Post Office at Fayetteville. The President of the Faculty cannot personally take charge of the financial affairs of students.

LITERARY SOCIETIES.

In the Collegiate department there are two Literary Societies, the "Mathetian" and "Philomathean." Students who are members

of the Sub-Freshman Class, are also eligible to membership in these.

Literary Societies may be organized in the High School and Preparatory Departments under proper restrictions. At present there is but one in operation, the Garland Society, organized during the past session.

LIBRARY AND READING ROOM.

The University Library, containing nearly 3000 volumes, comprises many valuable works, and additions are constantly being made. Nearly all the newspapers of the State of Arkansas, and several from other States have been generously furnished to the Library, either by the publishers or other friends of the University. The best magazines of America and some from England, France, and Germany are also purchased. All these are kept on file in the Library, and students have access to them, as well as to the books, at certain hours each day. No Library fee is charged, but a deposit of \$2 is required to insure proper care of the books taken from the Library.

APPARATUS AND MUSEUM.

The University is supplied with no inconsiderable amount of apparatus for illustrating the different scientific departments and for the prosecution of original work.

Valuable additions have been made in the last year to the Chemical and Physical Departments. Appropriations are made by the Board of Trustees, annually, for the purchase of needed supplies.

CABINET AND MUSEUM.

The cabinet of minerals consists chiefly of a collection of State minerals, contributed by various parties of the State, and by the professors; but it has been recently enlarged by purchase and embraces, besides, specimens of value from other States.

It is hoped that the day is not far distant when, by exchange and purchase the Institution will secure an ample supply of speci-

mens for illustration of the minerals and fossils of our own and other countries.

There has been constructed an herbarium case large enough to hold the indigenous plants of North America and such exotics as are of economic value. It will be the work of years to complete a collection of the plants of North America, but the work is progressing. A valuable addition was made last summer by the purchase of Prof. Harvey's collection of the plants of Arkansas.

There are about 500 species of animal specimens, to illustrate the various departments of zoology.

Collections in all the departments are slowly accumulating.

APPOINTMENT OF BENEFICIARIES.

All appointments should be completed, if possible, before the opening of the autumn term. The County Judges, who make the appointments, should prepare duplicate notifications of appointments, one of which should be forwarded to the President of the University, and one to the Secretary of the Board of Trustees; and in case the appointee fails to appear at the University within twenty days after an appointment (except in case of sickness), he or she will be regarded as having declined the appointment, in which case it will be the duty of the President of the Faculty to notify the person making the appointment of such failure, and he, in turn, should make another appointment as soon thereafter as possible; such other appointee being required to appear at the University as soon as possible after appointment. The President of the Faculty shall continue to notify appointing officers until their respective number of appointees make their appearance at the University.

All beneficiary and normal students should be present at the opening of the autumn term; and unnecessary delay, either of old students returning, or new ones reporting, will lead to the forfeiture of their appointments.

QUALIFICATIONS.

The attention of County Judges is called to the fact that *neither Normal nor Beneficiary Students will be admitted, unless they have the following qualifications:*

Students are not admitted until they have become familiar with the fundamental principles of arithmetic, viz: addition, subtraction, multiplication and division, and also of common and decimal fractions. In reading, they must be able to understand and intelligently render specimens of the grade of the Fourth Reader, must have a knowledge of primary English grammar, primary geography, the rudiments of penmanship, and the spelling of ordinary words of the grade of the Fourth Reader. These qualifications are the test of admission at the beginning of the session; those applying later will be admitted only on the grade of the class.

The sole object of the Normal Department being the training of teachers for the Public Schools of the State, the attention of County Judges is respectfully called to the following considerations:

Only such persons should be appointed to this Department as really intend to teach, and, if possible, those who have had some experience in teaching.

All who enter this department will be required to take the course of training prescribed, to fit them for teaching.

APPOINTMENT.

As much trouble and annoyance is caused by students who have been appointed as Beneficiaries or Normals coming without any evidence of appointment, the following are adopted as the proper forms of notice to be given by the Judge of County Court to the President of the University and the Secretary of the Board of Trustees, upon the appointment of Beneficiary and Normal Students by the County Court, or the Judge thereof, in accordance with the sixth section of an Act approved March 6, 1875:

[Form 1.—*Appointment.*]

No..... [To be given to the Student.]

To whom it may concern :

I hereby appointof.....
 County, State of Arkansas, as a Beneficiary (or Normal, as the case may
 be), to the Arkansas Industrial University.

Given under my hand, this.....of.....188.....

Send a notice like the following to the President of the
 University, and one to the Secretary of the Board of Trustees at
 Fayetteville.

[Form 2.—*Notice to President of the University.*]

.....Arkansas. }
 }

To the..... University :

I hereby notify you that I have this day appointed.....
of.....County, State of Arkansas, a
 Beneficiary (or Normal, as the case may be), to the Arkansas Industrial
 University.

Given under my hand, this.....day of.....
 188.....

BENEFICIARY AND NORMAL APPOINTMENTS.

It is provided in Section 18, of the Act of the General Assem-
 bly establishing the University, that the Board of Trustees shall
 have power to “prescribe the grade and number of scholarships,
 and prescribe the rules by which pupils who are to be admitted
 free, shall be elected equally from the various parts of the State.”
 They have, therefore, made provision for 600 Beneficiaries, who
 will be entitled to four years free tuition, and 400 Normal students,
 who are also entitled to four years free tuition. These are appor-
 tioned among the several counties according to their respective
 populations by the United States census of 1880, which appor-
 tionment is as follows:—[See Apportionment Table on succeeding
 page.]

COUNTIES.	Beneficiaries.	Normals.	COUNTIES.	Beneficiaries.	Normals.
Arkansas.....	6	4	Lee.....	10	6
Ashley.....	8	5	Lincoln.....	7	5
Baxter.....	4	3	Little River.....	4	2
Benton.....	16	9	Logan.....	11	8
Boone.....	9	6	Lonoke.....	9	6
Bradley.....	5	3	Madison.....	9	6
Calhoun.....	4	3	Marion.....	6	4
Carroll.....	10	6	Miller.....	7	5
Chicot.....	7	5	Mississippi.....	5	4
Clay.....	5	8	Monroe.....	7	5
Clark.....	12	3	Montgomery.....	4	3
Cleburne.....	5	3	Nevada.....	10	7
Cleveland.....	6	4	Newton.....	4	2
Columbia.....	11	8	Ouachita.....	9	6
Conway.....	10	6	Perry.....	2	1
Craighead.....	5	3	Phillips.....	16	10
Crawford.....	11	8	Pike.....	5	3
Crittenden.....	7	4	Poinsett.....	2	1
Cross.....	4	2	Pelk.....	4	3
Dallas.....	5	4	Pope.....	11	8
Desha.....	7	4	Prairie.....	6	4
Drew.....	9	6	Pulaski.....	25	18
Faulkner.....	11	6	Raudolph.....	9	6
Franklin.....	10	8	Saline.....	7	5
Fulton.....	5	3	Scott.....	7	4
Garland.....	7	4	Searcy.....	5	4
Grant.....	5	3	Sebastian.....	15	12
Greene.....	5	4	Sevier.....	5	3
Hempstead.....	14	10	Sharp.....	7	5
Hot Spring.....	6	4	Stone.....	4	4
Howard.....	7	5	St. Francis.....	6	4
Independence.....	13	8	Union.....	10	6
Izard.....	8	6	Van Buren.....	7	4
Jackson.....	9	6	Washington.....	18	12
Jefferson.....	17	12	White.....	13	8
Johnson.....	9	6	Woodruff.....	7	5
Lafayette.....	4	2	Yell.....	11	7
Lawrence.....	6	4			

There is also one "Honorary Scholarship" to each county, to be selected for superior merit and proficiency from the Public Schools of each county, according to Section 2, of Act July 23, 1868.

SALE OF ARDENT SPIRITS NEAR THE ARKANSAS INDUSTRIAL UNIVERSITY.

By an Act of the General Assembly of the State of Arkansas, approved March 6, 1875, it is unlawful for any person to sell or give any vinous or ardent spirits within three miles of the Arkansas Industrial University, unless it be prescribed by a regular practicing physician for medical purposes.

WINTER VACATION.

By resolution of the Board of Trustees, the next Winter Vacation will extend from Thursday evening, December 23d, to Monday, December 27.

Application for catalogue or blanks for Beneficiary Appointments should be addressed to Col. J. L. Cravens, Regent and Secretary, Fayetteville, Ark.

BRANCH NORMAL SCHOOL AT PINE BLUFF.

This Branch of the Normal Department of the Arkansas Industrial University was established by the General Assembly for the purpose of securing an adequate supply and properly trained teachers for the Public Colored Schools of the State. Its terms, course of study, sessions, etc., correspond with those of the Normal Department at Fayetteville, and each County Judge is entitled to appoint as many colored beneficiaries to the institution at Pine Bluff as his county is allowed, under the apportionment to send white ones to Fayetteville; consequently the two classes of appointments do not interfere with each other. The expenses of a student at Pine Bluff, for board and washing need not exceed \$12 per month, and a number of those who have heretofore attended have managed to reduce their expenses very materially by labor.

For further information address the Principal,

PROF. J. C. CORBIN,

Pine Bluff, Ark.

REPORT

—OF—

J. L. CRAVENS,

REGENT AND SECRETARY

—OF THE—

BOARD OF TRUSTEES.

JUNE 1, 1884, TO JUNE 4, 1886.

CURRENT EXPENSE ACCOUNT.

1884.	To amount balance on hand June 1, 1884.....	\$ 7,221 01
July..... 17	“ of State Treasurer	8,000 00
Sept..... 22	“ “	3,500 00
Oct..... 25	“ Washington County.....	597 00
Nov..... 16	“ Sundry Students' Tuition.....	820 00
1885.		
April..... 24	“ Washington County.....	6,000 00
May..... 30	“ City of Fayetteville.....	2,400 00
“ 30	“ Sundry Students' Tuition.....	712 25
“ 30	“ Farm produce, etc.....	130 92
		\$29,381 65

CONTRA.

June..... 7	By amount F. R. Morgan, tuning pianos.....	10 00
“ 7	“ W. H. Woodard, Janitor.....	60 35
“ 9	“ J. P. Eagle, for Dr. Maston.....	20 00
“ 9	“ Wm. McLroy, exchange.....	34 60
“ 9	“ N. P. Gates, postage.....	3 00
“ 9	“ J. L. Cravens, telegrams.....	2 68
“ 9	“ R. A. Brown, refunded.....	7 00
“ 12	“ J. L. Toft, marshal.....	10 00
“ 12	“ R. M. Barrow, refunded.....	3 10
“ 13	“ D. A. Gates, Librarian.....	10 00
“ 14	“ J. P. Eagle, Trustee.....	92 00
“ 14	“ G. J. Crump, Trustee.....	90 00
“ 14	“ Chas. Coffin, Trustee.....	129 70
“ 14	“ J. T. Bearden, Trustee.....	108 25
“ 14	“ J. W. Martin, Trustee.....	85 00
“ 14	“ W. E. Thompson, Trustee.....	63 00
“ 14	“ T. M. Gunter, Trustee.....	30 00
“ 14	“ W. H. Woodard, Janitor.....	33 25
“ 14	“ J. L. Cravens, bill.....	8 35
“ 14	“ C. P. Conrad, bill.....	53 30
“ 14	“ Whitlow & Lake, rope and tackle.....	28 50
“ 19	“ Robt. Irwin, service.....	6 50
“ 20	“ Thos. Jennings, transportation.....	74 80
“ 20	“ J. R. Berry, Trustee.....	36 30
“ 20	“ J. L. Cravens, for diplomas.....	8 08
“ 20	“ Robt. Alexander, labor.....	17 50
“ 20	“ Wm. Thompson, for corn.....	8 40
“ 20	“ A. Byron, repairing pump.....	1 00
“ 23	“ O. C. Gray, bal. on instruments.....	3 95
July..... 1	“ Baum & Bros., table cover.....	4 00
“ 1	“ E. B. and W. Moore, printing.....	10 00
“ 3	“ Reed, Mulholland & White, bill.....	3 50
“ 3	“ Harrison & Boteuhr, bill.....	9 25
“ 3	“ A. Byrne, repairing chairs.....	5 00
“ 3	“ H. K. Wade, express.....	50
“ 5	“ Robt. Alexander, labor.....	3 00
“ 12	“ J. A. Ferguson, for posts.....	2 50
“ 12	“ Geo. M. Edgar, salary.....	250 00
“ 12	“ H. K. Wade, express.....	1 75
“ 17	“ W. R. Vaughan, Janitor.....	9 55
“ 22	“ Robt. Alexander, labor.....	13 75
“ 22	“ D. H. Hill, postage.....	2 34
“ 26	“ E. B. and W. B. Moore, printing.....	14 50
“ 26	“ Geo. M. Edgar, salary.....	150 00
“ 28	“ Geo. M. Edgar, traveling expenses.....	60 00
“ 28	“ Robt. Alexander, labor.....	21 50
Aug..... 2	“ Mitchel & Bettis, printing.....	296 60
“ 2	“ W. H. Woodard, Janitor.....	16 20
“ 5	“ Ash & Jones, bill lumber.....	126 70
“ 7	“ H. B. Edmiston, express on catalogues.....	64 10
“ 7	“ N. J. Tillman, for posts.....	8 00
“ 11	“ Thos. Jennings, freight bill.....	1 25
“ 12	“ Robt. Alexander, labor.....	9 50
“ 22	“ Geo. M. Edgar, traveling expenses.....	14 00
“ 22	“ Robt. Alexander, labor.....	17 50
“ 23	“ Chas. Spencer, 25 cords wood.....	50 00
“ 25	“ Geo. M. Edgar, salary.....	250 00

CURRENT EXPENSE ACCOUNT—*Continued.*

Aug.....	25	By amount B. H. Stone & Co.....	\$ 20 12
"	26	H. K. Wade, express.....	2 05
"	28	J. D. Campbell, labor.....	2 25
"	28	John Zella, labor.....	2 25
"	28	H. Grother, labor.....	60
"	30	J. L. Bozarth, desk.....	60 00
"	30	W. H. Woodall, Janitor.....	44 15
"	30	Robt. Alexander, labor.....	5 00
"	30	J. D. Campbell, labor.....	1 50
"	30	A. Byrne, repairing pipes.....	24 80
"	30	H. J. Hall, labor.....	3 25
Sept.....	1	A. B. Hale, plastering.....	28 05
"	2	J. B. Merwin, bill.....	39 20
"	3	S. King, janitor work.....	2 00
"	3	Lumber Co., bill.....	14 40
"	3	E. Z. Davies, bill.....	7 10
"	3	Harrison & Botefuhr, bill.....	54 25
"	5	H. K. Wade, express.....	1 00
"	6	C. P. Conrad, library.....	17 26
"	6	C. P. Conrad, chemical apparatus.....	214 42
"	6	L. E. Archies, grass seed.....	1 00
"	6	Robt. Alexander, labor.....	6 00
"	8	Tyre Ellis, janitor work.....	50
"	8	J. D. Campbell, labor.....	1 00
"	8	F. L. Harvey, Biology account.....	34 73
"	9	Chas. Hausard.....	3 25
"	10	C. P. Conrad, salary.....	100 00
"	11	Whitlow & Lake, bill.....	47 05
"	13	J. B. Merwin, bill.....	25 15
"	13	F. L. Harvey, bill.....	7 25
"	13	F. L. Harvey, salary.....	200 00
"	13	Robt. Alexander, labor.....	9 00
"	13	W. W. McCart, labor.....	6 00
"	15	C. P. Conrad, library.....	9 88
"	25	E. B. & W. B. Moore, printing.....	20 50
"	25	F. L. Harvey, Biology account.....	20 00
"	26	Robt. Alexander, labor.....	15 25
"	26	Ash & Jones, bill lumber.....	5 04
"	27	John D. Letcher, salary.....	100 00
"	27	Ruth Johnson, salary.....	50 00
"	30	W. W. McCart, Janitor.....	58 06
"	30	F. L. Sutton, salary.....	85 00
"	30	G. W. Droke, salary.....	100 00
Oct.....	1	J. D. Van Winkle, bill.....	26 95
"	1	Lumber Co., bill.....	17 18
"	2	L. E. Archies, bill.....	2 05
"	2	Boles & Conner, bill.....	1 40
"	2	H. B. Edmiston, Modern Language account.....	27 00
"	2	H. B. Edmiston, salary.....	100 00
"	4	Geo. M. Edgar, salary.....	250 00
"	4	G. H. Babb, bill.....	28 20
"	4	North & Pollard, bill.....	2 65
"	10	C. P. Conrad, Library account.....	25 68
"	11	C. P. Conrad, Library account.....	38 90
"	11	P. H. Babb, bill.....	4 55
"	11	J. L. Reynolds, repairs.....	32 80
"	13	H. K. Wade, express.....	90
"	14	F. L. Harvey, Biology account.....	62 55
"	15	John Harmon, cutting wood.....	3 00
"	18	Robt. Alexander, labor.....	10 50
"	18	A. Byrne, moving house.....	9 59
"	21	Tyre Ellis, cutting wood.....	90
"	21	J. B. Merwin, bill.....	24 15
"	23	C. P. Conrad, Library account.....	43 25
"	24	P. H. Babb, bill.....	12 88
"	25	F. L. Harvey, salary.....	100 00
"	25	C. H. Leverett, salary.....	300 00
"	25	John Harmon cutting wood.....	10 00
"	25	J. D. Letcher, engineering account.....	3 25
"	30	Harry Marion, Messenger.....	6 00
"	30	Peter Smyth, 50 cords wood.....	100 00
"	30	H. K. Wade, express.....	6 00
"	30	W. W. McCart, Janitor.....	47 25
Nov.....	1	Lumber Co., bill.....	18 55
"	1	Baum & Bros., bill.....	44 55
"	1	J. W. Corlev, printing.....	15 20
"	1	J. D. Van Winkle, bill.....	12 00

CURRENT EXPENSE ACCOUNT—*Continued.*

Nov.....	1	By amount, J. D. Letcher, salary.....	\$100 00
"	1	Robert Alexander, labor.....	4 00
"	1	Geo. M. Edgar, salary.....	250 00
"	3	A. Byrne, bill.....	33 55
"	4	F. L. Sutton, salary.....	75 00
"	4	C. P. Conrad, salary.....	100 00
"	7	J. L. Bozarth, bill.....	5 00
"	8	F. L. Harvey, biology account.....	25 00
"	8	Robt. Alexander, labor.....	9 50
"	8	O. H. Leverett, salary.....	200 00
"	11	P. Humessee, wood.....	70 00
"	12	R. S. Grigsby, shrubbery.....	28 75
"	12	J. T. Reynolds, repairs.....	3 85
"	12	John Harmon, cutting wood.....	15 00
"	14	F. R. Morgan, tuning pianos.....	15 00
"	15	Henry Marion, messenger.....	6 00
"	15	C. P. Conrad, library account.....	21 03
"	15	Robert Alexander, labor.....	10 50
"	17	H. B. Edmiston, salary.....	100 00
"	17	Searcy Beacon, ad.....	5 08
"	18	G. W. Droke, salary.....	200 00
"	19	Henry Marion, messenger.....	3 00
"	21	J. L. Bozarth, bill.....	195 00
"	21	J. L. C. for drum heads.....	11 35
"	21	Geo. M. Edgar, salary.....	250 00
"	24	Uriah Cato, repairing pump.....	10 00
"	29	F. L. Harvey, salary.....	200 00
"	29	W. W. McCart, janitor.....	53 75
"	29	John Harmon, labor.....	10 00
Dec.....	2	Robt. Alexander, labor.....	15 75
"	2	Geo. M. Edgar, expense account.....	60 40
"	2	Chas. Coffin, trustee.....	30 15
"	2	H. M. Welch, salary.....	366 66
"	2	J. D. Letcher, salary.....	800 00
"	2	W. R. Vaughan, librarian.....	10 00
"	2	Lumber Co., bill.....	22 45
"	3	C. P. Conrad, salary.....	300 00
"	3	Ruth Johnson, salary.....	216 66
"	3	F. L. Sutton, salary.....	106 66
"	3	H. B. Edmiston.....	300 00
"	3	O. C. Gray, salary.....	500 00
"	3	S. E. Harris, salary.....	500 00
"	3	K. V. King, salary.....	200 00
"	3	N. G. Bedinger, salary.....	183 33
"	3	E. H. Connell, salary.....	266 66
"	3	H. Marion, messenger.....	8 00
"	3	A. Byrne, bill.....	68 50
"	3	Harrison & Botekehr, bill.....	135 10
"	3	Robt. Irvin, cutting wood.....	8 20
"	3	H. K. Wade, express and charges.....	50 50
"	3	A. Byrne, bill.....	48 00
"	5	B. T. Miller, guard.....	2 00
"	6	M. Coffey, bill.....	19 60
"	6	E. B. Kinsworthy.....	10 00
"	9	F. L. Harvey, biology acc't.....	8 00
"	9	C. P. Conrad, chemical account.....	49 25
"	9	C. P. Conrad, library account.....	30 15
"	11	A. B. Lewis, bill.....	7 55
"	12	P. Hennessen, wood.....	80 00
"	12	J. Harmon, cutting wood.....	4 75
"	13	H. K. Wade, express.....	5 70
"	13	J. T. Reynolds, repairs.....	9 59
"	13	Levison & Blythe, bill.....	14 10
"	15	H. K. Wade, express.....	45
"	17	F. L. Harvey, biology account.....	71 58
"	17	F. L. Harvey, salary.....	150 00
"	18	H. Marion, messenger.....	9 00
"	18	G. W. Droke, salary.....	75 00
"	24	Robt. Alexander, labor.....	2 60
"	24	Robt. Irvin.....	90
"	29	Wm. McIlroy, chemical account.....	153 63
"	31	Geo. M. Edgar, salary.....	250 00
"	31	W. W. McCart, janitor.....	73 37
"	31	W. W. McCart, ex-guard.....	10 00
Jan, 1885..	1	Whitlow & Lake, repairs.....	25 40
"	1	Reed, Malholland & White, bill.....	80
"	2	W. C. Cardwell, bill.....	2 50

CURRENT EXPENSE ACCOUNT—Continued.

Jan.....	2	By amount, Robt. Irwin, bill.....	\$ 2 15
"	5	" Gazette Printing Co., bill.....	40 20
"	7	" W. W. McCart, cutting wood.....	18 65
"	12	" A. Byrne, repairs.....	6 00
"	13	" J. W. Corley, printing.....	32 50
"	13	" C. P. Conrad, library account.....	200 49
"	13	" Geo. S. Albright, bill.....	4 35
"	13	" O. P. Conrad, library account.....	10 44
"	17	" S. E. Marrs, printing.....	10 00
"	17	" C. H. Leverett, salary.....	250 00
"	17	" F. L. Sutton, salary.....	75 00
"	21	" C. P. Conrad, chemical account.....	319 65
"	22	" For waste baskets.....	2 35
"	22	" J. C. Williams & Co., bill.....	1 20
"	24	" Geo. M. Edgar, salary.....	50 00
"	24	" F. L. Harvey, salary.....	100 00
"	26	" R. J. Wilson, services.....	2 00
"	26	" O. P. Conrad, library.....	8 34
"	26	" H. K. Wade, express.....	1 20
"	29	" O. C. Gray, salary.....	250 00
"	29	" C. P. Conrad, chemical account.....	7 46
"	29	" Geo. M. Edgar, salary.....	200 00
"	31	" Robt. Alexander, labor.....	4 00
"	31	" W. W. McCart, Janitor.....	76 50
"	31	" F. L. Harvey, biology account.....	12 10
Feb.....	2	" J. D. Van Winkle, bill.....	3 35
"	2	" Lumber Co., bill.....	25 75
"	2	" Gregg & Smith, bill.....	50
"	2	" Harrison & Botehr, bill.....	34 00
"	2	" G. W. Droke, salary.....	125 00
"	4	" Wilson & Dickson, bill.....	1 00
"	7	" Jo. Montgomery, messenger.....	4 50
"	7	" C. P. Conrad, chemical account.....	44 40
"	20	" J. & C., bill for dumb bells, etc.....	32 45
"	11	" Thos. Jennings, freight bill.....	2 85
"	11	" Jo. Montgomery, messenger.....	3 00
"	21	" C. H. Leverett, salary.....	250 00
"	21	" S. E. Harris, salary.....	500 00
"	21	" H. B. Edmiston, salary.....	500 00
"	24	" F. L. Sutton, salary.....	50 00
"	28	" H. M. Welch, salary.....	366 66
"	28	" Geo. M. Edgar, salary.....	250 00
"	28	" Jo. Montgomery, messenger.....	1 50
"	28	" W. W. McCart, Janitor.....	76 50
March.....	2	" Gregg & Smith, bill.....	1 25
"	2	" G. W. Droke, salary.....	100 00
"	5	" Mitchell & Bettis, printing.....	15 10
"	7	" J. D. Letcher, salary.....	500 00
"	7	" F. L. Harvey, salary.....	250 00
"	7	" O. C. Gray, salary.....	250 00
"	7	" C. P. Conrad, salary.....	500 00
"	7	" K. V. King, salary.....	200 00
"	7	" N. G. Bedinger, salary.....	133 33
"	7	" F. L. Sutton, salary.....	141 66
"	7	" E. H. Carnall, salary.....	266 66
"	7	" Ruth Johnson, salary.....	266 66
"	7	" Robt. Alexander, labor.....	5 50
"	9	" S. E. Marrs, printing.....	5 50
"	9	" W. P. McNair, freight bill.....	2 96
"	9	" F. L. Harvey, biology account.....	28 60
"	12	" Spaulding & Bros., bill.....	25 80
"	13	" Geo. M. Edgar, salary.....	50 00
"	13	" Jo. Montgomery, messenger.....	3 00
"	13	" P. H. Babb, repairs.....	1 00
"	23	" P. H. Babb, cases for library.....	33 50
"	25	" W. W. Harrison, oats.....	40
"	26	" E. B. Kinsworthy, clerk.....	10 00
"	27	" Jo. Montgomery, messenger.....	3 00
"	28	" Robt. Alexander, labor.....	4 50
"	28	" F. H. Humphreys, laboratory.....	5 60
"	28	" B. H. Stone & Co., bill.....	26 00
"	31	" W. W. McCart, Janitor.....	76 50
April.....	1	" J. D. Van Winkle, bill.....	12 16
"	1	" Geo. M. Edgar, salary.....	200 00
"	1	" Baum & Bros., bill.....	6 55
"	1	" Chas. Dale, bill coal.....	5 60
"	1	" C. P. Conrad, library account.....	36 78

CURRENT EXPENSE ACCOUNT—*Continued.*

April.....	2	By amount, W. H. Summers, piano stool.....	\$	4 50
"	2	S. E. Marrs, printing.....		1 50
"	3	Jo. Montgomery, messenger.....		1 50
"	4	Pharis Bell, repairing black-boards.....		19 45
"	10	A. Byrne, repairing pipes.....		6 50
"	10	Jo. Montgomery, messenger.....		1 50
"	11	L. E. Archies, clover seed.....		3 15
"	11	R. R. Smith, repairing drums.....		2 25
"	11	Robt. Alexander, labor.....		3 25
"	15	F. L. Harvey, biology account.....		10 00
"	15	C. P. Conrad, library account.....		7 31
"	17	Jo. Montgomery, messenger.....		1 50
"	24	J. T. Reynolds, repairs.....		7 80
"	25	Jo. Montgomery, messenger.....		1 50
"	25	J. D. Letcher, tape line.....		3 00
"	25	A. Byrne, gymnastic account.....		30 00
"	30	W. W. McCart, janitor.....		73 00
"	30	George M. Edgar, salary.....		250 00
May.....	1	Whitlow & Blake, glass bill.....		35 50
"	1	A. Volner, repairs.....		1 05
"	1	C. Dale, barrel lime.....		1 65
"	1	Robert Alexander, labor.....		2 00
"	1	Jo. Montgomery, messenger.....		1 50
"	2	O. P. Conrad, library account.....		12 63
"	2	O. C. Gray, salary.....		250 00
"	2	J. M. Mason, librarian.....		12 00
"	2	G. W. Droke, salary.....		50 00
"	4	F. L. Sutton, salary.....		50 00
"	8	George M. Edgar, salary.....		50 00
"	8	T. J. Reynolds, Repairs.....		1 00
"	8	Jo. Montgomery, messenger.....		1 50
"	14	Whitlow & Lake, bill.....		23 00
"	15	George M. Edgar, salary.....		25 00
"	16	Robert Alexander, labor.....		4 25
"	16	A. Byrne, bill.....		11 00
"	16	A. Byrne, bill.....		1 25
"	20	H. B. Edmiston, modern language account.....		82 31
"	20	H. B. Edmiston, salary.....		500 00
"	20	C. H. Leverett, salary.....		500 00
"	20	J. L. C., for diplomas.....		18 15
"	22	Jo. Montgomery, messenger.....		3 00
"	23	H. M. Welch, salary.....		366 68
"	23	H. M. Schaad, tuning pianos.....		20 00
"	27	George S. Albrighs, bell, etc.....		11 25
"	29	J. L. Cravens, postage.....		81 75
"	29	C. P. Conrad, salary.....		500 00
"	29	George M. Edgar, salary.....		175 00
"	30	O. C. Gray, salary.....		250 00
"	30	F. L. Harvey, salary.....		500 00
"	30	S. E. Harris salary.....		500 00
"	30	J. D. Letcher, salary.....		500 00
"	30	K. V. King, salary.....		200 00
"	30	N. G. Bodinger.....		133 34
"	30	G. W. Droke, salary.....		250 00
"	30	F. L. Sutton, salary.....		216 68
"	30	E. H. Carnall, salary.....		266 68
"	30	Ruth Johnson, salary.....		266 68
"	30	E. B. Harrison, bill.....		11 05
"	30	W. W. McCart, janitor.....		57 00
"	30	Balance on hand.....		3,851 48
				\$29,381 65

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

BIOLOGY ACCOUNT.

1884-85.	To amount appropriated.....	\$ 375 00	
"	By amount expended.....		\$ 272 56
"	By amount balance unexpended.....		102 44
			\$ 375 00

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

CHEMICAL AND PHYSICAL ACCOUNT.

1884-5.	To amount of estimate for year	\$ 700 00	
"	To amount overdrawn	90 81	
"	By amount expended	\$ 790 81	\$ 790 81

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

DRAINAGE ACCOUNT.

1884-5.	To amount balance on hand last year.....	\$ 144 69	
"	By amount expended		\$ 3 25
"	By amount balance in the treasury.....		141 44
			\$ 144 69

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

FARM AND GROUNDS ACCOUNT.

1884-5.	To amount estimate.....	\$ 1,000 00	
"	To amount received for produce sold.....	124 37	
"	By amount expended.....	\$ 1,124 37	\$ 475 19
"	By amount balance unexpended.....		649 18
			\$ 1,124 37

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

FURNITURE ACCOUNT.

1884-5.	To amount estimate	\$	100 00	
"	To amount to balance.....		343 02	
"	By amount expended.....	\$	443 02	\$ 443 02

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

FUEL ACCOUNT.

1884-5.	To amount estimate	\$	300 00	
"	To amount to balance.....		80 65	
"	By amount expended.....	\$	380 65	\$ 380 65

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

SALARY ACCOUNT.

1884-5.	To amount estimate.....	\$20,200 00	
"	By amount expended.....		\$18,800 00
"	By amount balance unexpended.....		1,400 00
			\$20,200 00

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

ENGINEERING ACCOUNT.

1884-5.	No estimate.....		
"	By amount expended.....		\$6 25

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

GYMNASTIC ACCOUNT.

1884-5.	No estimate.....		
"	By amount expended.....		\$169 69

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

JANITOR'S ACCOUNT.

1884-5.	To amount estimated.....	\$650 00	
"	To amount to balance.....	116 03	
"	By amount expended.....	\$766 03	\$766 03

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

LIBRARY ACCOUNT.

1884-5.	To amount estimated.....	\$500 00	
"	To amount to balance.....	34 64	
"	By amount expended.....	\$534 64	\$534 64

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

MISCELLANEOUS ACCOUNT.

1884-5.	To amount estimate.....	\$500 00	
"	" sundries.....	5 00	
"	By amount expended.....		\$759 99
"	To amount to balance.....	254 99	
		\$759 99	

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

CHEMICAL DEPOSIT ACCOUNT.

1884-5.	By amount expended.....	\$10 10
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Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

MODERN LANGUAGE ACCOUNT.

1884-5.	To amount estimate.....	\$150 00	
"	" to balance.....	7 31	
"	By amount expended.....	\$157 31	\$157 31

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

POSTAGE ACCOUNT.

1884-5. To amount estimate.....	\$100 00	
“ “ to balance.....	21 09	
“ By amount expended.....	\$121 09	\$121 09

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

REPAIRS ACCOUNT.

1884-5. To amount estimate.....	\$200 00	
“ “ sundries	1 55	
“ “ to balance.....	164 70	
“ By amount expended.	\$366 25	\$366 25

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

STATIONERY AND PRINTING ACCOUNT.

To amount estimate.....	\$ 275 00	
To amount to balance.....	313 88	
By amount expended.....		\$ 588 89

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

TRUSTEES ACCOUNT.

To amount estimate.....	\$ 1,000 00	
By amount expended.....		\$ 380 10
By amount unexpended.....		119 90

Approved June 9, 1885.

T. M. GUNTER, *Chairman Finance Committee.*

CURRENT EXPENSE ACCOUNT.

1885-6.			
June.....	4	To amount balance from last report.....	\$ 3,851 48
"	4	" State Treasurer, insurance account.....	1,800 00
July.....	13	" State Treasurer, heating account.....	4,800 00
"	13	" State Treasurer, roof account.....	2,400 00
"	13	" State Treasurer, regents salary account.....	250 00
"	18	" Washington County.....	2,000 00
"	18	" Sundries.....	7 75
September.....	18	" Sundry Students, tuition.....	500 00
"	18	" Sundry Students, board account.....	600 00
"	18	" State Treasurer, heating account.....	3,200 00
"	18	" State Treasurer, current expense account.....	8,000 00
October.....	20	" J. H. Van Hoose, policy cancelled.....	95 76
"	20	" J. Cravens, for hay.....	7 10
"	31	" Sundry Student, board account.....	400 00
November.....	11	" A. Rickert, damage to building.....	20 00
"	21	" State Treasurer, current expense account.....	5,000 00
1886.			
January.....	8	" Sundry Students, boarding account.....	560 00
"	20	" Sundry Students, boarding account.....	380 00
"	20	" State Treasurer, regents salary account.....	250 00
"	29	" Washington County.....	945 00
"	29	" City of Fayetteville.....	298 60
"	29	" Sundry Students, boarding account.....	580 00
March.....	3	" Washington County.....	3,055 00
"	3	" Sundry Students, boarding account.....	410 00
"	3	" Sundry Students, tuition.....	160 00
April.....	10	" Sundry Students, boarding account.....	492 75
"	10	" Sundry Students, tuition.....	63 00
May.....	3	" Washington County.....	3,820 00
"	27	" City of Fayetteville.....	2,260 00
"	27	" Sundry Students, boarding account.....	516 75
"	27	" Sundry Students, tuition.....	471 30
"	27	" Lumber sold.....	155 50
"	27	" Sundry Students, chemical deposit account.....	21 64
"	27	" Sundry Students, library deposit account.....	24 00
"	27	" Fuel sold.....	19 70
"	27	" Stoves, etc., sold.....	107 45
"	27	" Sundries.....	2 00
June.....	3	" Lumber sold.....	56 00
			\$47,580 78

CREDIT.

1886.			
June.....	3	By amount, E. Z. Davis, repairs account.....	\$ 1 13
"	3	" M. Coffey, smith bill.....	8 50
"	4	" A. B. Lewis, bill.....	7 25
"	4	" P. H. Babb, bill.....	79 00
"	4	" Robert Alexander, labor.....	18 00
"	6	" W. P. McNair, telegram.....	80
"	8	" Adams & Boyle, insurance.....	275 00
"	8	" Marshall & Allis, insurance.....	275 00
"	8	" E. B. Wall, insurance.....	165 00
"	8	" J. H. VanHorse, insurance.....	715 00
"	8	" George S. Albright, bill.....	50
"	8	" E. B. Kinsworthy, clerk.....	10 00
"	11	" J. P. Eagle, trustee expense.....	58 50
"	11	" J. T. Bearden, trustee expense.....	184 00
"	12	" F. L. Harvey, biology account.....	34 00
"	12	" J. W. Martin, trustee expense account.....	94 90
"	12	" W. E. Thompson, trustee expense account.....	87 50
"	12	" G. J. Crump, trustee expense account.....	93 00
"	12	" T. M. Gunter, trustee expense account.....	60 00
"	12	" S. P. Hughes, trustee expense account.....	39 90
"	12	" Charles Coffin, trustee expense account.....	108 75
"	12	" Gress & Leigh, insurance.....	220 00
"	12	" George M. Edgar, trustee expense.....	88 00
"	13	" S. E. Marrs, printing.....	10 50
"	13	" S. C. Treadwell, services.....	4 00
"	13	" Rev. Dr. Hiden, expense account.....	40 00
"	15	" W. W. McCart, janitor.....	25 35

CURRENT EXPENSE ACCOUNT—Continued.

1886.			
June.....	15	“ Thomas Jennings, transportation.....	\$ 53 60
“	16	“ Jo Montgomery, messenger.....	2 00
“	16	“ G. S. Albright, bill.....	95
“	18	“ George M. Edgar, salary.....	100 00
“	18	“ Naomi W. Williams, salary.....	40 00
“	18	“ Mason, library account.....	3 43
1885.			
June.....	18	“ George M. Edgar, for clerk hire.....	50 00
“	29	“ George M. Edgar, expense to Washington.....	100 00
“	29	“ George M. Edgar, salary.....	150 00
“	30	“ W. W. McCart, janitor.....	30 30
“	30	“ H. K. Wade, express.....	85
July.....	1	“ J. D. VanWinkle, bill.....	11 45
“	9	“ A. M. Woodruff, bill.....	450 00
“	9	“ J. P. Eagle, trustee expense account.....	29 00
“	10	“ G. J. Crump, trustee expense account.....	99 70
“	10	“ Charles Coffin, trustee expense account.....	48 25
“	10	“ J. L. Cravens, expense account.....	47 30
“	10	“ T. M. Gunter, trustee expense account.....	69 00
“	10	“ J. W. Martin, trustee expense account.....	17 50
“	10	“ W. E. Thompson, trustee expense account.....	17 50
“	10	“ George M. Edgar, trustee expense account.....	56 30
“	11	“ J. L. Cravens, salary.....	125 00
“	13	“ C. P. Conrad, chemical account.....	6 00
“	13	“ H. K. Wade, express.....	1 70
“	16	“ Mitchell & Bettis, bill.....	19 65
“	16	“ W. P. McNair, freight bill.....	8 35
“	18	“ H. H. Wade, express.....	6 00
“	22	“ J. L. Cravens, for cut of building.....	7 08
“	25	“ George Knapp & Co., advertisement.....	14 10
“	25	“ H. K. Wade, express.....	3 60
“	29	“ Robert Alexander, labor.....	19 60
“	29	“ J. F. Howell, express on catalogues.....	20 50
“	30	“ W. W. McCart, janitor.....	30 45
“	31	“ Gregg & Smith, bill.....	1 95
August.....	1	“ S. E. Marrs, printing.....	2 00
“	1	“ Wilson & Dickson, bill.....	50
“	1	“ C. Dale, bill.....	1 75
“	1	“ J. H. Babb, bill of repairs, Stewards Hall.....	300 00
“	1	“ Geo. M. Edgar, bill.....	6 70
“	1	“ Geo. M. Edgar, balance salary, 1884-5.....	100 00
“	1	“ Geo. M. Edgar, salary.....	250 00
“	3	“ Gazette Printing Co., catalogues.....	146 25
“	4	“ Thomas Jennings, freight bill.....	3 90
“	8	“ P. H. Babb, repairs to Stewart Hall.....	119 51
“	10	“ Thomas Jennings, freight bill.....	259 10
“	11	“ Mitchell & Bettis, bill.....	6 08
“	12	“ F. L. Harvey, bill.....	35 50
“	12	“ F. L. Harvey, copy of report.....	2 00
“	14	“ A. Siegle Gas Fixture Company, on contract.....	2,133 50
“	15	“ P. H. Babb, repairs steward's hall.....	212 60
“	15	“ P. H. Babb, work chemical laboratory.....	20 30
“	15	“ P. H. Babb, bill.....	2 00
“	18	“ Thomas Jennings, freight bill.....	1 65
“	18	“ F. L. Harvey, order executive committee.....	600 00
“	18	“ F. L. Harvey, order Col. Edgar.....	14 00
“	24	“ P. H. Babb, repairs steward's hall.....	25 00
“	25	“ Thomas Jennings, freight bill.....	18 74
“	25	“ F. L. Harvey, order Prof. Purinton.....	3 00
“	25	“ Thomas Jennings, freight bill.....	20 30
“	28	“ H. K. Wade, express.....	1 30
“	29	“ P. H. Babb, chemical account.....	6 80
“	29	“ P. H. Babb, gate.....	2 00
“	29	“ P. H. Babb, repairs.....	40 85
“	29	“ P. H. Babb, repair steward's hall.....	268 63
“	31	“ North & Pollard, repairing flag.....	14 05
“	31	“ W. W. McCart, janitor.....	38 00
Sept.....	1	“ J. M. Whitham, salary.....	100 00
“	1	“ P. H. Babb, 12,000 feet flooring.....	203 60
“	1	“ J. D. VanWinkle, bill.....	4 70
“	1	“ J. C. Williams & Co., paint.....	4 60
“	1	“ Whitlow & Lake, bill.....	1 80
“	2	“ J. T. Reynolds, black board.....	6 00
“	2	“ Reed, Mulholland & White, bill.....	1 30
“	3	“ George M. Edgar, salary.....	250 00
“	4	“ E. B. Harrison, bill.....	48 15

CURRENT EXPENSE ACCOUNT—*Continued.*

1885.			
September..	4	Ry amount, E. B. Harrison, bill.....	\$ 10 50
"	4	" Whitlow & Lake, bill.....	3 75
"	4	" J. L. Bozarth, bill.....	24 50
"	5	" C. Dale, fuel bill.....	445 75
"	5	" Thomas Jennings, freight.....	5 10
"	10	" S. E. Marrs, printing.....	2 00
"	11	" J. L. Bozarth, bill.....	9 00
"	11	" Treadwell, janitor.....	2 00
"	16	" E. L. Fisher, freight bill.....	25 00
"	17	" J. L. Cravens, bill.....	3 95
"	18	" W. C. Cardwell, bill.....	1 00
"	19	" Willard Scott, manager.....	3 00
"	19	" G. D. Purinton, bill.....	9 90
"	19	" N. H. Bigger, printing.....	3 00
"	19	" G. T. Edgar, manager.....	1 50
"	22	" Thomas Jennings, bill.....	18 10
"	24	" P. H. Babb, bill.....	34 40
"	24	" G. D. Purinton, chemical account.....	98 38
"	24	" C. H. Chessbrough, labor.....	6 25
"	24	" J. M. Whitham, physics account.....	200 00
"	26	" M. O'Connell, cleaning guns, etc.....	18 00
"	26	" Rosebud Moss, salary.....	88 88
"	26	" Geo. M. Edgar, salary.....	250 00
"	26	" N. H. Bigger, printing.....	22 00
"	28	" J. L. Knesel, order of Purinton.....	2 00
"	29	" Thomas Jennings, freight bill.....	5 40
"	29	" C. H. Chessbrough, labor.....	2 35
"	29	" W. W. McCart, janitor.....	46 35
Oct	1	" R. H. Willis, salary.....	150 00
"	1	" Howard Edwards, salary.....	150 00
"	1	" E. H. Murfee, salary.....	150 00
"	1	" U. D. Purinton, salary.....	150 00
"	1	" J. F. Howell, salary.....	150 00
"	1	" A. F. Lewis, salary.....	80 00
"	1	" Geo. W. Macon, salary.....	80 00
"	1	" J. B. Greene, salary.....	80 00
"	1	" E. C. Weimer, salary.....	88 00
"	1	" Libbie M. Hall, salary.....	80 00
"	1	" R. Carter, bill.....	38 98
"	1	" Wilson & Dickson, bill.....	4 42
"	1	" Wilson & Dickson, bill.....	15 20
"	1	" J. T. Reynolds, repairs.....	8 75
"	1	" J. L. Bozarth, bill.....	4 50
"	1	" G. D. Purinton, chemical account.....	40 00
"	1	" J. F. Howell, boarding account.....	37 70
"	1	" J. F. Howell, Stewart's hall account.....	15 35
"	1	" Boles & Conner, bill.....	1 15
"	1	" Boles & Conner, bill.....	34 48
"	1	" Moulton & Nelson, bill.....	35
"	1	" Moulton & Nelson, bill.....	2 45
"	1	" Reed, Mulholland & White, bill.....	118 84
"	1	" Reed, Mulholland & White, bill.....	58 70
"	2	" N. Seyler, bill.....	5 50
"	2	" W. C. Cardwell, bill.....	60
"	2	" J. D. Van Winkle, bill.....	47 25
"	2	" A. B. Lewis, bill.....	2 00
"	2	" A. B. Lewis, bill.....	15 90
"	2	" P. H. Babb.....	25
"	2	" P. H. Babb.....	75
"	2	" W. Scott, manager.....	3 00
"	2	" Baum & Bros, bill.....	2 50
"	2	" Baum & Bros, bill.....	3 08
"	3	" C. Dale, bill.....	4 90
"	3	" P. H. Babb.....	1 50
"	3	" Geo. S. Albright, bill.....	3 15
"	3	" Ginn & Heath, bill.....	9 08
"	3	" Ivison B. & Taylor, bill.....	39 40
"	3	" Chas Coffin trustee expense.....	29 25
"	6	" Thomas Jennings, freight bill.....	29 48
"	6	" Ed. O'Donnell, heating contract.....	25 00
"	6	" G. S. Albright, bill.....	61 61
"	8	" W. P. McNair, freight bill.....	103 63
"	9	" H. K. Wade, express.....	1 40
"	9	" E. B. Harrison, bill.....	7 85
"	9	" E. B. Harrison, bill.....	6 20
"	9	" Thomas Jennings.....	1 00

CURRENT EXPENSE ACCOUNT.—Continued.

1884.			
October.....	10	By amount, J. M. Whitham, salary	\$ 50 00
"	10	" " A. Siegle, Gas Fixture Company	4,689 87
"	10	" " L. C. Caul on roof contract	45 00
"	12	" " G. D. Purinton, chemical account	90 00
"	14	" " August Reichart, roof contract	530 00
"	15	" " P. H. Babb, 1 case	6 00
"	16	" " J. J. Keynolds, repairs	4 00
"	17	" " B. Tucker, labor	2 00
"	17	" " Will Joyce, labor	3 00
"	17	" " L. C. Caul, roof contract	60 00
"	23	" " R. H. Willis, library account	10 20
"	24	" " W. R. Vaughan, board refunded	10 00
"	24	" " P. H. Babb, bill	19 75
"	26	" " J. H. Van Hoose, insurance	55 00
"	28	" " S. H. Blackmer, bill	41 50
"	28	" " S. H. Blackmer, bill	7 10
"	28	" " S. H. Blackmer, bill	3 50
"	31	" " G. D. Purinton, chemical account	561 23
"	31	" " W. Scott, messenger	4 50
"	31	" " J. L. Cravens, salary	125 00
"	31	" " J. M. Whitham, salary	150 00
"	31	" " P. H. Babb, bill	12 50
"	31	" " P. H. Babb, bill	15 30
"	31	" " J. H. Van Hoose, insurance	55 00
"	31	" " L. C. Caul, roof contract	50 00
"	31	" " M. Coffey, bill	4 50
"	31	" " Geo. M. Edgar, salary	250 00
"	31	" " W. W. McCart, janitor	68 50
"	31	" " C. Dale, bill lumber	3 30
"	31	" " August Reichart, roof contract	200 00
"	31	" " Whitlow & Lake, bill	4 15
"	31	" " Whitlow & Lake, bill	35 25
"	31	" " B. H. Stone, bill	6 00
"	31	" " Wilson & Dickson, bill	4 85
"	31	" " A. B. Lewis, bill	25 55
"	31	" " Reed, Mulholland & White, bill	232 22
"	31	" " Reed, Mulholland & White, bill	9 10
"	31	" " R. H. Willis, salary	150 00
"	31	" " H. Edwards, salary	150 00
"	31	" " E. H. Murfee, salary	150 00
"	31	" " Geo. D. Purinton, salary	150 00
"	31	" " J. F. Howell, salary	80 00
"	31	" " A. F. Lewis, salary	80 00
"	31	" " Geo. W. Macon, salary	80 00
"	31	" " J. B. Green, salary	80 00
"	31	" " E. C. Weimer, salary	80 00
"	31	" " Rosebud Moss, salary	80 00
"	31	" " L. M. Hall, salary	80 00
"	31	" " Stonewall Tompkins, salary	80 00
November...	5	" " R. Carter, bill	56 76
"	5	" " L. Seyler, bill	5 90
"	5	" " J. C. McClellan, bill	5 00
"	6	" " Wilson & Dixon, bill	85
"	7	" " Gregg & Smith, bill	3 30
"	7	" " Gregg & Smith, bill	12 75
"	7	" " P. H. Babb, bill	10 65
"	7	" " P. H. Babb, bill	86 00
"	7	" " J. F. Howell, bill	1 95
"	7	" " J. F. Howell, boarding account	58 83
"	7	" " J. L. Bozarth, bill	9 00
"	10	" " Thos. Jennings, bill	7 70
"	11	" " J. S. Waterson, bill	6 00
"	12	" " John Thomas, labor	1 50
"	13	" " H. K. Wade, express	3 20
"	14	" " Willard Scott, messenger	3 00
"	14	" " P. H. Babb, bill	27 09
"	16	" " S. H. Blackmer, bill	27 45
"	16	" " S. H. Blackmer, bill	8 00
"	16	" " S. H. Blackmer, bill	13 70
"	16	" " S. E. Cassino, library account	6 08
"	17	" " John Thomas, labor	5 00
"	19	" " August Reichart, roof contract	619 41
"	21	" " P. H. Babb, bill	17 00
"	21	" " H. K. Wade, express	1 50
"	21	" " John Thomas, labor	6 75
"	21	" " John Thomas, blasting powder	1 75

CURRENT EXPENSE ACCOUNT—*Continued.*

1884.				
November..	25	By amount, T. H. Phelps, freight bill.....	\$	91 60
"	19	" C. Davenport, engine and boiler		693 00
"	26	" H. Edwards, salary.....		150 00
"	27	" R. H. Willis, library account.....		153 12
"	28	" P. H. Babb, bill.....		29 45
"	28	" P. H. Babb, bill.....		1 00
"	28	" P. H. Babb, bill.....		9 00
"	28	" P. H. Babb, bill.....		4 40
"	28	" John Thomas, labor.....		15 00
"	28	" J. F. Howell, boarding account.....		100 00
"	30	" W. W. McCart, janitor.....		71 00
December...	1	" George M. Edgars, salary.....		250 00
"	1	" R. H. Willis, salary.....		150 00
"	1	" E. H. Murfee, salary.....		150 00
"	1	" J. M. Whittham, salary.....		150 00
"	1	" G. D. Purinton, salary.....		150 00
"	1	" J. F. Howell, salary.....		150 00
"	1	" A. F. Lewis, salary.....		80 00
"	1	" George W. Macon, salary.....		80 00
"	1	" J. B. Greene, salary.....		80 00
"	1	" S. Tompkins, salary.....		80 00
"	1	" E. C. Weimer, salary.....		80 00
"	1	" Rosebud Moss, salary.....		80 00
"	1	" L. M. Hall, salary.....		80 00
"	1	" Whitlow & Lake, bill.....		30 53
"	1	" Whitlow & Lake, bill.....		2 77
"	1	" Whitlow & Lake, bill.....		2 15
"	1	" Thomas Jennings, bill.....		4 61
"	1	" J. D. VanWinkle, bill.....		9 60
"	2	" Reed, Mulholland & White, bill.....		221 24
"	2	" Reed, Mulholland & White, bill.....		5 20
"	2	" G. C. Pendergrass, bill.....		68 77
"	2	" N. H. Bigger, printing.....		8 00
"	2	" Wilson & Dickson, bill.....		4 65
"	2	" H. K. Wade, express.....		60
"	2	" B. C. Duffie, clerk.....		4 00
"	5	" P. H. Babb, bill.....		12 00
"	5	" G. D. Purinton, bill.....		4 55
"	7	" A. B. Lewis, bill.....		22 70
"	9	" A. Siegle Gas Fixture Company, contract.....		387 50
"	9	" A. Siegle Gas Fixture Company contract.....		45 88
"	11	" P. H. Babb, bill.....		10 55
"	12	" John Thomas, labor.....		15 00
"	12	" J. McCormack, bill.....		21 03
"	12	" F. H. Rice, painting.....		18 00
"	12	" P. H. Babb, bill.....		7 65
"	15	" T. H. Phelps, freight bill.....		103 45
"	16	" Pal Tye, labor.....		4 00
"	16	" S. Tompkins, bill.....		1 73
"	16	" H. K. Wade, express.....		70
"	16	" E. H. Murfee, salary.....		150 00
"	18	" E. L. Fisher, freight.....		1 90
"	18	" A. B. Lewis, bill.....		7 90
"	19	" John Thomas, labor.....		17 00
"	19	" P. H. Babb, bill.....		13 85
"	19	" P. H. Babb, bill.....		3 00
"	21	" H. Sweitzer, bill.....		1 00
"	21	" J. D. Rice, painting roof.....		33 60
"	23	" S. A. Lemons, coal.....		62 50
"	23	" John Thomas, labor.....		14 37
"	24	" S. H. Blackmer, bill.....		3 50
"	24	" H. Sweitzer, bill.....		1 00
"	28	" Gazette, printing bill.....		24 65
"	30	" George M. Edgar, salary.....		250 00
1886.				
January.....	1	" H. Edwards, salary.....		150 00
"	1	" J. M. Whittham, salary.....		150 00
"	1	" G. D. Purinton, salary.....		150 00
"	1	" J. F. Howell, salary.....		150 00
"	1	" A. F. Lewis, salary.....		80 00
"	1	" G. W. Macon, salary.....		80 00
"	1	" J. B. Green, salary.....		80 00
"	1	" E. C. Weimer, salary.....		80 00
"	1	" Rosebud Moss, salary.....		80 00
"	1	" L. M. Hall, salary.....		80 00
"	1	" S. Tompkins, salary.....		80 00

CURRENT EXPENSE ACCOUNT—Continued.

1886.				
January	1	By amount, W. W. McCart, janitor		\$ 58 26
"	1	" S. H. Blackmer, bill		50 45
"	1	" Whitlow & Lake, bill		5 25
"	2	" W. L. Blanks, bill		2 75
"	2	" J. C. Williams & Co., bill		40
"	2	" R. H. Willis, salary	150	00
"	4	" E. B. Harrison, bill	4	30
"	5	" Reed, Mulholland & White, bill	180	49
"	5	" J. F. Sliter	40	
"	5	" Jackson & Tyler, bill	1,002	00
"	6	" G. C. Pendergrass, bill	2	95
"	6	" E. B. Harrison, bill	9	40
"	6	" A. B. Lewis, bill	28	00
"	7	" W. J. Ward, bill	1	50
"	7	" W. J. Ward, bill	4	10
"	7	" Sleigh & Co., for tongs	3	53
"	8	" J. C. McCormick, bill	68	50
"	8	" H. K. Wade, express	6	65
"	8	" Byran & Volmer, repairs	115	80
"	8	" H. K. Wade, express	1	75
"	8	" A. Volmer, bill	2	50
"	13	" E. L. Fisher, freight bill	8	00
"	16	" S. A. Lemons, coal	67	80
"	16	" J. B. Baker	1	00
"	20	" E. L. Fisher, freight	1	86
"	22	" Keuffel & Esser, bill	6	56
"	23	" J. M. Whitham, bill	41	05
"	23	" A. Sweitzer, bill	4	80
"	25	" James McWhorter	1	50
"	25	" John P. Sliter	50	
"	25	" B. R. Davidson, for Neely	58	00
"	28	" Siegh & Co., bill	105	97
"	28	" J. L. Cravens, order of board	150	00
"	28	" J. L. Cravens, order of board	350	00
"	29	" Edgar, for messages	5	50
"	29	" J. L. Cravens, salary	250	00
"	30	" S. A. Lemons, coal	121	25
"	30	" Geo. M. Edgar, salary	250	00
"	30	" A. Byrne, bill	90	00
"	30	" W. W. McCart, janitor	74	70
"	30	" E. L. Fisher, freight	3	70
"	30	" J. B. McWhorter	1	00
"	30	" C. Dale, lumber bill	51	90
February ...	1	" R. H. Willis, library account	115	65
"	1	" J. D. Van Winkle, bill	2	95
"	3	" J. L. C. for Martin & Thompson, trustees	25	15
"	3	" R. H. Willis, salary	150	00
"	3	" H. Edwards, salary	150	00
"	3	" E. H. Murfer, salary	150	00
"	3	" J. M. Whitham, salary	150	00
"	3	" G. D. Purinton, salary	150	00
"	3	" J. F. Howell, salary	150	00
"	3	" A. F. Lewis, salary	80	00
"	3	" G. W. Macon, salary	80	00
"	3	" J. B. Greene, salary	80	00
"	3	" E. C. Weimer, salary	80	00
"	3	" Rosebud Moss, salary	80	00
"	3	" L. M. Hall, salary	80	00
"	3	" S. Tompkins, salary	80	00
"	5	" J. C. McCormick, bill	89	80
"	5	" G. C. Pendergrass, bill	1	25
"	5	" A. B. Lewis, bill	16	30
"	5	" Reed, Mulholland & White, bill	198	84
"	6	" A. Byrne, bill	22	10
"	6	" A. Byrne, bill	14	00
"	6	" W. J. Ward, bill	60	
"	8	" John Harmon, labor	1	00
"	11	" Whitlow & Lake, bill	6	00
"	13	" J. F. Howell, boarding account	250	00
"	15	" John S. Prestidge, labor	15	00
"	18	" Will Prestidge, labor	12	50
"	19	" A. Byrne, labor	6	25
"	19	" S. A. Lemons, coal	116	66
"	19	" E. L. Fisher, freight	13	80
"	20	" J. M. Whitham, physicians account	61	33
"	20	" A. George	1	25

CURRENT EXPENSE ACCOUNT.—Continued.

1886.			
February	20	By amount, J. H. Neely.....	\$ 6 40
"	23	" J. L. Cravens, paid bill for vices	39 20
"	23	" J. L. Cravens, paid bill and exchange.....	175 58
"	24	" E. L. Fisher, freight.....	15 08
"	25	" K. V. King, tuning pianos.....	15 00
"	26	" R. H. Willis, bill.....	2 09
"	26	" G. D. Purinton, farm account	4 15
"	26	" H. K. Wade	2 00
"	27	" Jo. Montgomery, messenger.....	1 50
"	27	" S. A. Lemons, coal	39 50
"	27	" S. A. Lemons, coal	5 20
"	27	" Geo. M. Edgar, salary.....	250 00
"	27	" W. W. McCart, janitor.....	63 50
"	27	" J. D. Van Winkle, bill.....	4 08
"	27	" C. Dale, coal	17 00
March	1	" R. H. Willis, salary.....	150 00
"	1	" H. Edwards, salary.....	150 00
"	1	" E. H. Murfee, salary.....	150 00
"	1	" J. M. Whitham, salary.....	150 00
"	1	" G. D. Purinton, salary	150 00
"	1	" J. F. Howell, salary.....	150 00
"	1	" A. F. Lewis, salary.....	80 00
"	1	" G. W. Macon, salary	80 00
"	1	" J. B. Greene, salary	80 00
"	1	" E. C. Weimer, salary	80 00
"	1	" Rosebud Moss, salary.....	80 00
"	1	" L. M. Hall, salary.....	80 00
"	1	" S. Tompkins, salary.....	80 00
"	1	" K. V. King, salary.....	135 00
"	2	" C. Dale, lumber bill.....	21 25
"	2	" J. H. Hobbs, chemical deposit refunded.....	4 65
"	3	" N. Seyler, bill.....	3 65
"	3	" Wm. Prestidge.....	1 00
"	4	" Reed, Mulholland & White, bill.....	213 60
"	4	" D. M. Harbison, bill.....	5 20
"	5	" Jo. Montgomery, messenger.....	1 50
"	6	" H. S. Gray, labor.....	9 00
"	6	" H. S. Gray, labor.....	3 00
"	8	" J. A. McCormick.....	67 08
"	8	" A. Volner, bill.....	10 65
"	8	" A. Volner, bill.....	65
"	13	" Jo. Montgomery, messenger.....	1 50
"	13	" J. G. Scott, bill.....	4 30
"	13	" H. S. Gray, labor.....	5 00
"	13	" A. B. Lewis, bill.....	9 50
"	13	" S. A. Lemons, coal.....	64 00
"	13	" S. A. Lemons, coal	8 70
"	13	" W. J. Ward.....	40
"	13	" I. T. Lantrip, janitor.....	5 00
"	15	" G. W. Baldrige, labor.....	17 70
"	19	" R. H. Wills, library.....	30 59
"	20	" Jo Montgomery, messenger.....	1 50
"	20	" H. S. Gray, labor.....	13 00
"	20	" J. T. Lantup, janitor	10 00
"	22	" Gerge M. Edgar, salary.....	150 00
"	22	" R. W. McDirmid, labor.....	15 30
"	25	" Jo Montgomery, messenger.....	75
"	26	" S. A. Lemons, coal.....	32 50
"	26	" S. A. Lemons, coal.....	4 50
"	26	" B. J. Moseley.....	40
"	31	" George M. Edgar, salary.....	100 00
"	31	" R. H. Willis, salary.....	150 00
"	31	" H. Edwards salary.....	150 00
"	31	" E. H. Murfee, salary.....	150 00
"	31	" J. M. Whitham, salary.....	150 00
"	31	" G. D. Purinton, salary.....	150 00
"	31	" J. F. Howell, salary.....	150 00
"	31	" A. F. Lewis, salary.....	80 00
"	31	" G. W. Macon, salary.....	80 00
"	31	" J. B. Green, salary.....	80 00
"	31	" E. C. Weimer, salary.....	80 00
"	31	" Rosebud Moss, salary.....	80 00
"	31	" L. M. Hall, salary.....	80 00
"	31	" S. Tompkins, salary.....	80 00
"	31	" P. H. Babb, bill.....	4 00
"	31	" T. H. Phelps, freight bill.....	5 00

CURRENT EXPENSE ACCOUNT—*Continued.*

1886.			
March.....	31	By amount, W. W. McCart, janitor.....	\$ 48 80
"	31	" J. T. Lantrip, labor.....	9 00
April.....	1	" J. T. Lantrip, labor.....	15 00
"	1	" W. H. Whitlow, bill.....	5 20
"	1	" E. B. Harrison, bill.....	2 50
"	1	" E. B. Harrison, bill.....	24 85
"	1	" E. B. Harrison, bill.....	43 85
"	1	" Curry & Simpson, bill.....	2 18
"	1	" Curry & Simpson, bill.....	1 50
"	1	" C. L. McCruneman, messenger.....	1 00
"	2	" Geo. S. Albright, bill.....	7 78
"	2	" C. Dale, bill.....	3 95
"	3	" J. M. Whitham, physicians account.....	26 04
"	3	" J. M. Whitham, medical account.....	1 50
"	3	" J. A. McCornick, bill.....	78 24
"	5	" Reed, Mulholland & White, bill.....	159 85
"	5	" Boles & Co., bill.....	8 61
"	5	" Geo. S. Albright, bill.....	25
"	5	" D. M. Harbeson, bill.....	17 08
"	7	" J. C. McClellan, bill.....	18 00
"	7	" J. B. Gill, bone meal.....	35 20
"	8	" A. B. Lewis, bill.....	45 20
"	8	" J. L. Cravens, postage.....	46 12
"	9	" Dee McCrunman, messenger.....	1 50
"	10	" Byrne & Babb, bill.....	10 90
"	10	" A. Volner, bill.....	3 90
"	10	" S. A. Lemons, coal.....	65 00
"	10	" S. A. Lemons, coal.....	12 70
"	10	" J. T. Lantrip, janitor.....	20 00
"	10	" J. A. Cormick, bill.....	4 00
"	13	" E. L. Fisher, freight bill.....	13 89
"	13	" G. W. Baldrige, labor.....	16 00
"	15	" A. L. Jackson, library department, refunded.....	2 00
"	16	" R. H. Willis, library account.....	11 08
"	16	" Dee McCrunman, messenger.....	1 50
"	16	" W. C. Dunaway, musical account.....	8 00
"	17	" J. D. Rice, painting roof.....	20 00
"	19	" B. L. Mills, library department, refunded.....	2 00
"	21	" John Laffey, labor.....	1 75
"	21	" Geo. M. Edgar, salary.....	100 00
"	21	" Rice & Lanier, painting department.....	51 05
"	21	" W. J. Ward, library department, refunded.....	1 90
"	21	" J. D. Van Winkle, for Lantrip, janitor.....	5 00
"	21	" E. W. Ripley, library account.....	4 00
"	21	" Dee McCrunman, messenger.....	1 50
"	24	" J. T. Lantrip, labor.....	5 00
"	30	" J. T. Lantrip, labor.....	25 40
"	30	" J. T. Lantrip, janitor.....	5 00
May.....	1	" W. H. Whitlow, bill.....	13 00
"	1	" W. H. Whitlow, bill.....	2 60
"	1	" Geo. Sutton, repairing belts.....	1 25
"	1	" W. J. Savage, order Willis.....	5 00
"	1	" W. E. Whitford, labor.....	1 45
"	1	" W. W. McCart, janitor.....	48 85
"	1	" H. Edwards, salary.....	50 00
"	1	" S. A. Lemons, coal.....	35 30
"	1	" S. A. Lemons, coal.....	3 55
"	1	" Dee McCrunman, messenger.....	1 50
"	3	" J. D. Van Winkle, bill.....	1 75
"	3	" J. T. Reynolds, repairs.....	1 50
"	3	" Conner & White, bill.....	163 46
"	3	" Geo. M. Edgar, salary.....	150 00
"	3	" R. H. Willis, salary.....	150 00
"	3	" H. Edwards, salary.....	100 00
"	3	" E. H. Murfee, salary.....	150 00
"	3	" J. M. Whitham, salary.....	150 00
"	3	" Geo. D. Purinton, salary.....	150 00
"	3	" J. F. Howell, salary.....	150 00
"	3	" A. J. Lewis, salary.....	80 00
"	3	" G. W. Macon, salary.....	80 00
"	3	" J. B. Greene, salary.....	80 00
"	3	" E. C. Weirer, salary.....	80 00
"	3	" Rosebud Moss, salary.....	80 00
"	3	" L. M. Hall, salary.....	80 00
"	3	" S. Tompkins, salary.....	80 00
"	4	" C. Boles & Co., bill.....	17 17

CURRENT EXPENSE ACCOUNT—*Continued.*

1886.			
May	4	By amount, A. B. Lewis, bill.....	\$ 53 30
"	4	" D. M. Harbison, bill.....	35 48
"	8	" Dee McCrunman, messenger.....	1 50
"	8	" J. F. Howell, boarding account.....	250 00
"	8	" J. C. McCormick, bill.....	5 80
"	11	" J. C. McClellan, bill.....	18 10
"	11	" L. E. Archias, bill.....	16 05
"	12	" G. W. Baldrige, labor.....	21 75
"	14	" J. T. Lantrip, labor.....	10 00
"	14	" C. A. Davis, library deposit returned.....	2 00
"	15	" C. Dale, bill.....	5 85
"	17	" W. C. Dunaway.....	3 00
"	19	" Charles Scribner's Sons.....	2 30
"	21	" G. D. Purinton, salary.....	50 00
"	21	" Dee McCrunman, messenger.....	1 50
"	22	" J. M. Wade, library deposit returned.....	2 00
"	22	" I. M. Patridge, printing.....	12 50
"	22	" E. H. Murfee, library account.....	5 40
"	22	" S. A. Lemons, coal.....	13 95
"	24	" H. K. Wade, express.....	55
"	24	" J. T. Reynolds, painting.....	7 65
"	24	" J. T. Lantrip, labor.....	10 00
"	25	" H. F. Locke, bill.....	2 50
"	25	" Ora Obenshain, chemical deposit returned.....	3 90
"	27	" Pal Tye, labor.....	5 00
"	27	" John Harmon, labor.....	13 50
"	27	" R. H. Willis, library account.....	23 64
"	29	" G. W. Baldrige, labor.....	33 80
"	29	" Dee McCrunman, messenger.....	3 00
"	31	" George M. Edgar, salary.....	250 00
"	31	" R. H. Willis, salary.....	300 00
"	31	" H. Edwards, salary.....	300 00
"	31	" E. H. Murfee, salary.....	300 00
"	31	" J. M. Whitham, salary.....	300 00
"	31	" George D. Purinton, salary.....	250 00
"	31	" J. F. Howell, salary.....	300 00
"	31	" A. P. Lewis, salary.....	160 00
"	31	" G. W. Macon, salary.....	160 00
"	31	" J. B. Greene, salary.....	160 00
"	31	" E. C. Weimer, salary.....	152 00
"	31	" Rosebud Moss, salary.....	151 12
"	31	" L. M. Hall, salary.....	160 00
"	31	" S. Tompkins, salary.....	80 00
"	31	" K. V. King, salary.....	65 00
"	31	" S. Tompkins, salary.....	80 00
"	31	" J. T. Lantrip, labor.....	10 00
"	31	" J. C. McClellan, bill.....	4 75
"	31	" E. B. Harrison, bill.....	6 95
"	31	" E. B. Harrison, bill.....	29 90
"	31	" E. B. Harrison, bill.....	1 10
"	31	" George Sutton, bill.....	2 25
"	31	" J. A. Reed, bill.....	55
"	31	" C. Dale, bill.....	1 20
"	31	" W. W. McCart, janitor.....	54 85
"	31	" A. B. Lewis, bill.....	69 35
"	31	" D. M. Harbison, bill.....	46 38
"	31	" C. A. Mulholland, bill.....	109 55
"	31	" A. Volner, bill.....	4 30
"	31	" Connor & White, bill.....	50 80
"	31	" balance on hand.....	1,807 73
			\$47,580 78

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

LADIES INDUSTRIAL ART DEPARTMENT.

1885-6—To amount of estimate.....	\$ 500 00	
“ By amount transferred to manual training school.....		\$ 150 00
“ By amount expended.....		104 16
“ By amount unexpended.....		245 84
		\$ 500 00

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

BOARDING HOUSE ACCOUNT.

1885-6—To amount received of various students.....	\$3,359 50	
“ By amount paid on order of Prof. Howell.....		\$3,359 50

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

CHEMICAL ACCOUNT.

June, 1885—To amount estimate.....	\$1,000 00	
“ To amount overdrawn.....	20	
“ By amount expended.....	\$1,000 20	\$1,000 20

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

CHEMICAL DEPOSIT ACCOUNT.

June, 1885—To amount of sundry students.....	\$ 21 64	
“ By amount expended		\$ 8 55
“ By amount to balance		13 09
		\$ 21 64

Approved June, 1885.

T. M. GUNTER.

DRAINAGE ACCOUNT.

June, 1885—To amount on hand last report.....	\$ 141 44	
“ By amount expended.....		\$ 133 47
“ By amount balance on hand		7 97
		<hr/> \$ 141 44

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

FARM AND GROUNDS ACCOUNT.

June, 1885—To amount estimate.....	\$ 500 00	
“ To amount sundries.....	7 10	
“ By amount expended.....	\$ 507 10	\$ 323 87
“ By amount to balance.....		183 23
		<hr/> \$ 507 10

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

FURNITURE ACCOUNT.

June, 1885—To amount estimate.....	\$ 200 00	
“ By amount expended		\$ 134 15
“ By amount to balance.....		65 85
		<hr/> \$ 200 00

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

FUEL ACCOUNT.

June, 1885—To amount estimate.....	\$ 600 00	
“ To amount fuel sold.....	19 70	
“ To amount overdrawn.....	321 81	
“ By amount expended.....	\$ 941 51	\$ 941 51

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

SALARY ACCOUNT.

June, 1885—To amount estimate.....	\$17,840 00	
“ To amount overdrawn.....	20 00	
“ By amount expended.....	\$17,860 00	\$17,860 00

Approved June 9, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

STEAM HEATING ACCOUNT.

June, 1886—To amount State appropriation	\$8,000 00	
“ By amount expended.....		\$7,950 19
“ By amount balance on hand.....		49 81
		\$8,000 00

Approved June 9, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

JANITOR'S ACCOUNT.

June, 1886—To amount estimated.....	\$700 00	
“ To amount over estimation.....	53 31	
“ By amount expended.....	\$753 31	\$753 31

Approved June 9, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

INSURANCE ACCOUNT.

June, 1886—To amount State appropriation.....	\$1,800 00	
“ To amount policy surrendered.....	95 76	
“ By amount expended.....	\$1,895 76	\$1,760 00
“ By amount balance on hand.....		135 76
		\$1,895 76

Approved June 9, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

LIBRARY ACCOUNT.

June, 1885—To amount estimate.....	\$500 00	
“ By amount expended.....		\$445 04
“ By amount balance.....		54 96
		\$500 00

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

LIBRARY ACCOUNT DEPOSIT.

June, 1885—To account of sundry students.....	\$ 24 00	
“ By amount refunded.....		\$ 9 90
“ By amount balance on hand.....		14 10
		\$ 24 00

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

MISCELLANEOUS ACCOUNT.

June, 1885—To amount estimate.....	\$690 00	
“ To amount sundries.....	117 20	
	\$807 20	\$539 73
“ By amount expended.....		267 47
“ By amount balance.....		\$807 20

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

MANUAL TRAINING SCHOOL.

June, 1885—To amount estimate.....	\$2,500 00	
“ To amount transferred from art department.....	150 00	
“ To amount furnishing account.....	100 00	
“ To amount printing account.....	100 00	
“ To amount special appropriation.....	100 00	
“ To amount lumber sold.....	211 50	
“ By amount expended.....		\$2,292 03
“ To amount over estimate.....	130 58	
	\$2,292 03	

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

POSTAGE ACCOUNT.

June, 1885—To amount estimate.....	\$100 00	
“ By amount expended.....		\$ 46 12
“ By amount to balance.....		53 88
		<hr/> \$100 00

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

PHYSICAL DEPARTMENT ACCOUNT.

June, 1885—To amount estimate.....	\$400 00	
“ By amount expended.....		\$395 92
“ By amount to balance.....		4 08
		<hr/> \$400 00

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

REPAIRS ACCOUNT.

June, 1885—To amount estimate.....	\$150 00	
“ To amount received for damage to building.....	20 00	
“ To amount over estimate.....	81 18	
“ By amount expended.....	<hr/> \$251 18	\$251 18

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

ROOF ACCOUNT.

June, 1885—To amount State appropriation.....	\$2,400 00	
“ By amount expended.....		\$2,057 40
“ By amount balance on hand.....		343 60
		<hr/> \$2,400 00

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

STATIONERY AND PRINTING ACCOUNT.

June, 1885—To amount estimate.....	\$ 600 00	\$ 100 00
“ By amount transferred to manual training school.....		366 21
“ By amount expended.....		133 39
		\$ 600 00

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

SPECIAL APPROPRIATION.

June, 1885—To amount estimate.....	\$1,184 00	
“ By amount transferred to manual training school.....		\$ 100 00
“ By amount expended.....		1,084 00
		\$1,184 00

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

STEWARD'S HALL ACCOUNT.

June, 1885—To amount of estimate for repairs.....	\$ 800 00	
“ To amount of estimate for furniture.....	200 00	
“ To amount over estimate.....	139 51	
“ By amount expended.....	\$1,139 51	\$1,139 51

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

TUITION ACCOUNT.

June, 1885—To amount of sundry students.....	\$1,774 30	
“ By amount Treasurer's receipt.....		\$1,774 30

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

TRUSTEES ACCOUNT.

June, 1885—To amount estimate.....	\$1,000 00	
“ To amount over estimate.....	307 10	
“ By amount expended		\$1,307 10

Approved June, 1886.

T. M. GUNTER, *Chairman Finance Committee.*

REGENT SALARY ACCOUNT.

June, 1885—To amount appropriation.....	\$ 500 00	
“ By amount expended		\$ 500 00

Approved June, 1886.

T. M. GUNTER, *Chhirman Finance Committee.*

J. L. CRAVENS, REGENT.

CASH ACCOUNT.

1885.			
June.....	1	To amount, balance from last report.....	\$ 130 92
July.....	13	“ State Treasurer.....	7,450 00
“.....	13	“ sundries.....	7 25
“.....	18	“ Washington county.....	2,000 00
August.....	18	“ sundries.....	50
September..	18	“ sundry students, tuition.....	500 00
“.....	18	“ sundry students, boarding account.....	600 00
“.....	18	“ State Treasurer, heating account.....	3,200 00
“.....	18	“ State Treasurer, current expense.....	8,000 00
October.....	20	“ J. H. Van Hoose, insurance account.....	95 76
“.....	20	“ produce sold.....	7 10
“.....	31	“ sundry students, boarding account.....	400 00
November..	11	“ damage to building.....	20 00
“.....	11	“ State Treasurer.....	5,000 00
1886.			
January.....	1	“ sundry students, boarding account.....	560 00
“.....	20	“ sundry students, boarding account.....	380 00
“.....	20	“ city of Fayetteville.....	298 60
“.....	20	“ State Treasurer.....	250 00
“.....	20	“ Washington county.....	945 00
“.....	20	“ sundry students, tuition.....	580 00
March.....	3	“ Washington county.....	3,055 00
“.....	3	“ sundry students, boarding account.....	410 00
“.....	3	“ sundry students, tuition.....	160 00
April.....	20	“ sundry students, boarding account.....	492 75
“.....	10	“ sundry students, tuition.....	63 00
May.....	3	“ Washington county.....	3,820 00
“.....	25	“ sundry students, chemical department account.....	21 64
“.....	25	“ sundry students, library department account.....	24 00
“.....	25	“ lumber sold.....	155 50
“.....	25	“ fuel sold.....	19 70
“.....	25	“ stoves, etc., sold.....	107 45
“.....	26	“ city of Fayetteville.....	2,260 00
“.....	26	“ sundry students, boarding account.....	516 75
“.....	26	“ sundry students, tuition.....	471 30
“.....	26	“ sundries.....	2 00
“.....	26	“ flooring sold.....	56 00
			\$42,060 22

REPORT
OF THE
BOARD OF VISITORS
TO THE
ARKANSAS
INDUSTRIAL UNIVERSITY
FOR THE YEAR 1885.

FORT SMITH, ARK., May 3, 1886.

HON. SIMON P. HUGHES, *Governor of the State of Arkansas, and
President of the Board of Trustees of the Arkansas Industrial
University:*

SIR:—The gentlemen appointed by you upon the Board of Visitors to the Arkansas Industrial University for the year 1885, assembled in a room assigned to them in the main building, on the 4th day of June, A. D., 1885, and organized by the electing of Ben T. DuVal, President, and J. M. Taylor, Secretary.

The annual examination and Commencement exercises were in progress, and continued during the week. The Board were in attendance upon both as far as practicable, but it was impossible in the short time they were together to give as much attention to them as they would have desired.

The University was not in a prosperous condition. There were dissensions in the Faculty, the number of students in attendance was less than two hundred, of which about forty were in the Collegiate Department.

The Board feeling the importance of the University to the people of the State of Arkansas, and the responsibility resting upon them to carry out the objects designed by the Congress of the United States in making the donation of land for its establishment, turned their attention to the ascertainment, if possible, of the failure therein, and the means necessary to put the Institution in a more prosperous condition.

The first resolution adopted by them was the following :

“ Resolved, That in the opinion of the Board of Visitors, the time has arrived when the Board of Trustees should, in conformity with the Act of Congress making the donation of lands for the establishing the University, and the Acts of the General Assembly accepting such grant, make provisions for giving Mechanical and Agricultural instruction so far as the means at their disposal will permit.”

In view of the great expense of maintaining a full force of Professors in the Collegiate Department for so small a number of students, the Board adopted a resolution requesting the Board of Trustees to look into the practicability of so reorganizing the Faculty of the University that the duties of primary instruction be distributed among the Faculty of the University proper. And also, suggesting to the Trustees the advisability of consolidating the Chair of Civil Engineering with that of Mathematics.

The Board ascertained that owing to the long distance from the University to the boarding places of the students, that the latter were beyond the control of the officers and Faculty during a great part of the time.} And while too much cannot be said in favor of the high standard of morals and culture of the citizens of Fayetteville, the Board of visitors discovered that the discipline of the University could never be perfect while the students were subject to influences unfavorable to the habit of obedience. They,

therefore, unanimously were of the opinion that it was necessary for the success of the University that the students be fed and lodged within the grounds, that suitable dormitories, furnished with plain bedsteads and other necessary furniture, should be provided for that purpose. And they adopted a resolution suggesting to the Board of Trustees to consider the feasibility of fitting up the old Steward's Hall, and some of the unoccupied rooms of the University building, for the lodging of the male students until permanent dormitories can be provided.

The Board of Visitors made a personal inspection of the Hall referred to, and ascertained that fifty students could be accommodated there with lodging, and a much larger number could be furnished with meals.

The suggestion was carried out by the Board of Trustees with the happiest results, as you will see by the letter of President Edgar, dated April 28, 1886, and hereto annexed as a part of this report.

In order to obtain the views of the members of the Faculty upon the various subjects under consideration for the improvement of the condition of the University, and make it more useful to the State, the Board of visitors submitted to them the following questions:

1. Give your views briefly as to the feasibility of changing the University into an Agricultural and Mechanical Institution.
2. Would it be advisable to unite the literary and industrial features?
3. Would it, in your opinion, be advisable to have a winter instead of a summer vacation?
4. What, in your opinion, would be the effect of lowering the grade of scholarship, as contemplated by the resolution of the last General Assembly?
5. What, in your opinion, is the lowest rate at which students could be furnished suitable board if proper dormitories were furnished?

6. Is there, in your opinion, anything in the climate of this region deleterious to the health of students coming from the southern portion of the State?

7. Are there any precautions necessary to be taken by those sending students from the southern section of the State?

8. How does the health of the students in this University compare with the health of students in similar institutions in other localities, and are there any sanitary improvements necessary to improve or protect the health of the students of the University?

9. What, in your opinion, are the most urgent needs and necessities of the University at the present time?

10. What do you think of the propriety of abolishing the Preparatory Department?

To which we received replies from Professors Conrad, Edminson, Harvey, Leverett, Letcher, Gray and Welch, all of which are annexed as a part of this report.

The Board was deeply imbued with the belief that the State was bound to carry out the requirements of the Act of Congress making the donation to found the University, by providing that courses in Agriculture and Mechanical Arts should be taught.

One of the members, Hon. J. H. Moore, one of the largest planters in the State, a devotee to agriculture, was appointed a committee to inquire into and report to the Board what steps should be taken to provide the practical teaching of Scientific Agriculture in the University. He submitted the following:

“My idea of what an Agricultural School should be, to be a success, is one devoted entirely to the teaching of Agriculture, with a farm sufficiently large to fully demonstrate the different theories of tilling the soil, the use and kind of manure, the raising and fattening of meat producing animals, the feed value of the different products of the farm, the use and management of improved farm machinery, and veterinary surgery. But, as I have doubts whether, even under the best success that can now be obtained, a sufficient number of boys that would take an exclusive

Agricultural education could be induced to attend this school to occupy all the buildings at the A. I. U., I think it best to adopt the idea of Col. Edgar and make a mixed school; that is to give those boys who wish it an Agricultural education, and to others a Literary course. But I am fully convinced that a farm of not less than four hundred acres of land will be necessary to fully demonstrate the theory of Agriculture.

“This will give an opportunity to solve the problem as to whether it can be made a success—part Agricultural, part Literary. I am certain that Col. Edgar will give the trial his best endeavors, and will make it a success if it can be done; and even if it should fail we would then have the experience; this would be gained by the trial, and we would be enabled to so change it as to make a success.

“I would suggest, then, in our report to the Legislature, we recommend the following appropriations:

For a Farm.....	\$12,000 00.
For Farm Machinery and Stock.....	5,000 00.
For Mechanical Department.....	2,000 00.

“This will be sufficient to make a commencement, and further needs can be filled as found wanted.

“Even if the trial should prove a failure the cost to the State will not be great, as the land will always be worth the money it cost, and the machinery and farm stock could be sold for about cost.

“I fully believe that there is no want in our State so great as that of educated farmers, and I believe that when once the farmers learn the great benefit that will be reaped by their sons that they will support the College willingly and send their sons.

“J. H. MOORE.”

The recommendations contained therein were heartily endorsed by the Board.

By the unfortunate and untimely death of our esteemed brother the State lost one of her best citizens and the University.

one of its ablest and most zealous friends. His place in every position, public and private, will be hard to fill. He was devoted to agricultural pursuits, bringing to his assistance a rich and varied learning. His highest ambition was to see our University take a leading position with similar Institutions, and provide the means of practical education in Science, Literature, Mechanics and Agriculture. To this end he was bending all the energies of his nature, and laboring with untiring zeal, when by an accident he lost his life.

The Board ascertained that a tract of four hundred acres adjoining the University tract could be purchased at from \$30 to \$40 per acre.

The Board unanimously agreed to recommend the next General Assembly to make the following appropriations, in order that this University may be made an Agricultural and Mechanical School, in accordance with the object of its establishment, to-wit:

To Purchase Sufficient Land for a Farm.....	\$12,000 00.
For Mechanical Department.....	3,000 00.
Farm Machinery and Stock	5,000 00.
To Build two Dormitories	16,000 00.
For Farm Superintendent.....	1,200 00.
For Master Mechanic	1,600 00.
For Stewart's Hall.....	3,000 00.
For Fitting up one Room in the Basement for Laboratory	1,000 00.
Total.....	<u>\$52,800 00.</u>

With the above comparatively trifling sum the University could be placed upon a firm footing, and started upward toward final success.

There is no reason why this Institution should not keep step with the great growth and rapid progress of our State. The awakened enterprise of our people has given a great bound forward to every industry—why should the University be neglected and cast off? With the additional buildings provided for in the above estimate,

there will be room enough to accommodate a thousand students; the additional cost of education of that number will be but slight.

The Board of Visitors did not adjourn *sine die* at Fayetteville. The Board of Trustees had already decided to make some changes in regard to the course of study, embracing instruction in Mechanics, etc.; also in regard to boarding as many of the students on the ground as possible; and it was also expected that part, at least, of the faculty would be removed and new ones employed.

In view of these important moves contemplated, and in part suggested, and urged by the Board of Visitors, they thought it best to continue their existence during the year, hoping that the President of the Board and others might be able to visit the University and witness the working of the new system.

But sickness in the family of the President prevented him from visiting the Institution, and in order to bring before you the result, as far as ascertained, of the changes inaugurated by the Board of Trustees, I addressed a letter to President Edgar, to which the letter hereto annexed is a response.

In making this report I have not incorporated in it anything which was not discussed and agreed upon by the Board when in session. Have not made a suggestion of any kind of my own, herein, that was not purposely adopted. We were impressed with the solemn fact that the Institution was not accomplishing its mission for the want of adequate support.

We believe and hope that a better feeling towards the University is growing, a deeper and wider interest is being manifested, and under the wise management of the present Board of Trustees, we think it will become popular, and at no distant day will be the pride of our people, and that its students will be numbered by thousands instead of hundreds.

BEN T. DU VAL.

President of the Board of Visitors.

REPORT
OF THE
BOARD OF VISITORS
TO THE
ARKANSAS INDUSTRIAL UNIVERSITY
FOR THE YEAR 1886.

To His Excellency, S. P. HUGHES, Governor of the State of Arkansas, and President of the Board of Trustees:

SIR:—The Board of Visitors appointed by your Excellency to visit the Arkansas Industrial University, on the Commencement occasion closing the scholastic year of 1885 and 1886, beg leave to make the following report of their actions in the premises.

We find the following repairs necessary to be made on the University building, to-wit:

The heating apparatus recently placed in the building is wanting in sufficient and proper stop cocks in the piping to cut off steam when a limited number of rooms is to be heated.

The basement hall and corridors should be sealed and vents closed to prevent the passage of foul air from below to the rooms above, and a waste of steam.

The vents in the fire-flues or chimneys in the basement should be closed to economize steam. The stone-work of the front portico

needs repairing, one or more of the large stones being broken or cracked. The walls of the south wing, at the southwest and north-west corner, cracked and damaged otherwise by the cyclone some years ago, should be repaired by replacement of brick and painting, and it may be well to have the walls at these points clamped.

The plastering of several of the rooms is cracked and falling off, and should be repaired at once.

In the engine room the joists and other posts of the wood-work should be protected from the heat of the boiler flues, and in the same room the window sills should be replaced where displaced, and suitable coal bins be made and placed properly at the windows through which coal is dumped, so that as little damage will follow to and defacing of the basement walls and windows as possible.

We suggest that storm doors be placed over the entrance and doors of the basement, so as to protect them from the rain and snow, which cause great decay. We find the present Steward's Hall, established as an experiment and with the smallest possible outlay of money, to be admirably conducted, so as to fully demonstrate its practicability, and especially is the experiment a success when the utter unsuitableness of the building used is taken into consideration.

Your Board of Visitors unanimously and earnestly recommend as an imperative necessity, the immediate erection of two dormitories, one for males and one for females, each of the capacity to accommodate one hundred and fifty students; a residence for the President and one for the Commandant of the Cadets, and a Steward's Hall of sufficient capacity to accommodate the whole number of students and the necessary servants, all to be erected on the University grounds.

And your Board of Visitors beg leave to say that without the additional buildings, the health and comfort of the students cannot be secured, their morals protected, nor proper discipline enforced and maintained.

Without these improvements we deem the success of this, the grandest enterprise of our Commonwealth, exceedingly problematical.

The outlay required is small compared with the priceless benefits that will inevitably accrue to the State, in the physical, intellectual and moral well being of the University students, and the solace of anxious parents and guardians.

Your Board of Visitors avail themselves of the opportunity to express their gratification at the results of your investments in the initial experimental Machine and Work Shop, giving evidence of a wise and skillful management by Professor Stonewall Tompkins, and the interest and improvement of the students in this Department. We commend it still further to the confidence and kind favor of the State, and earnestly recommend an appropriation to procure additional shop room, material and machinery, to the amount of six thousand dollars, according to the estimate made by the Professor in charge.

Your Board of Visitors recommend that five hundred dollars per annum be appropriated for the purpose of carrying on a free Normal School at the University during the summer vacation.

We think this sum will secure the services of at least two eminent educators, from the best Normal Colleges, for ten weeks in each year; that such a school will draw to it many of the teachers of our common schools throughout the State, and thereby a mutual impetus will be given to the University and our common schools, and a closer connection established between them.

Your Board of Visitors recommend that your Excellency take steps at once to procure the detail of an officer of the United States Army to take charge of the University Cadets; and to induce the establishment of a Signal Service Station at the University.

We take pleasure in saying, in this connection, that in our opinion the Honorable Board of Trustees were exceedingly happy in their selection of the present Commandant of Cadets, Professor Whitman, and that our recommendation as to the detail of an officer to take charge of the Cadets is but looking to the near future when Professor Whitman's labors in the Department of Civil Engineering, and so forth, will engross all his time, and

because the detail of an Army officer can only be had for the instruction and command of the Cadets.

We are satisfied, that at this present meeting the Honorable Board of Trustees have fully and carefully examined into the financial condition of the University, and respectfully refer to their report for information on that subject, not having time ourselves, in the brief period allowed us, to make an examination of the book and accounts of the Regent, and other officers of the University.

We find a corps of teachers in the University fully up to requirements of the times, accomplished, energetic and devoted to their work. We find the internal discipline as strict as it is proper to have, and the friction between the students and the faculty not greater than is in similar institutions. We find the deportment and general bearing of the students just such as is the result of the very best training and the most enlightened instruction.

Your Board of Visitors suggest that the attention of the General Assembly is specially directed to the fact that this is one of the cheapest Universities in America, and that any one of our children, no matter how poor, may, by diligence and attention, here obtain a complete Agricultural, Mechanical, or Classical education, at a comparatively small cost.

Finally, having examined the entire building and grounds, having heard many recitations, having witnessed the competitive drills of the Cadets, the deportment of the students, and having witnessed exercises of the graduating class, we are constrained to add, that all that our previous Legislatures have done for the University is most commendable, and that the present condition of affairs, after making due allowance for those minor errors and imperfections incident to the earlier years of all great institutions of learning, is such as to encourage and justify the ensuing and all future Legislatures to appropriate with even a more liberal hand the revenues of the State, to the end that the University may become the pride of this and the glory of future generations of Arkansas.

All of which is respectfully submitted by the undersigned,
your Board of Visitors.

June 12, 1886.

A. W. DINSMORE,
Chairman.

HENRY G. BUNN,
Secretary.

J. C. TAPPAN,
JOHN M. STAYTON,
H. B. ARMSTEAD,
JOSIAH H. SHINN,

REPORT
OF THE
MEDICAL DEPARTMENT
OF THE
ARKANSAS INDUSTRIAL UNIVERSITY.

LITTLE ROCK, March 1, 1886.

The Trustees of the Medical Department herewith transmit, through Col. George M. Edgar, President Arkansas Industrial University, to His Excellency, S. P. Hughes, Governor of the State, and ex-officio President of the Board, a copy of their Eighth Annual Announcement and Catalogue.

This Announcement and Catalogue contains a variety of general information, and explains to you, Sir, the character of the work undertaken and its progress to date. It should be remembered that this Department is the legitimate offspring of the Industrial University at Fayetteville, an Institution justly the pride of this rapidly developing Commonwealth, exhibiting a variety of soil and production not excelled by any other State within the area of her boundaries.

While its parent has been duly fostered and cherished, as also its Normal Department, at Pine Bluff, and the Insane, the Blind, and Deaf-Mute Asylums have received at the hands of our honor-

able Legislators that assistance and aid so necessary to their advancement and usefulness, this department has never been honored or encouraged, other than in the name it bears.

The work that was eight years ago inaugurated, and is still being pursued with all the energy possible under the surrounding circumstances, is producing a regeneration in the medical profession of the State. It is a rapidly advancing medical educator, and developing a high order of proficiency in this Department of Science, and rendering it co-operative and co-efficient with all literary and other institutions of learning throughout the State. This institution has made progress without other aid than the energy of its faculty, who have not only given their time and services, but have, as far as their moderate means would admit, dispensed them in the same generous manner.

The first lecture opened with only three students, while the session of 1885 and '86 gave the College fifty-three matriculates and sixteen graduates.

While we have managed to purchase our building it will not be adapted to an increase of fifty more students, and in order that we can compete with other Medical Colleges, we are sorely in need of increased apparatus to illustrate our teaching, and we also require the donation of a medical library. With the donation of ten thousand dollars for these purposes, we can add materially to the interest and capacity of the work now being accomplished; we also trust that in a very few years we can have the benefit of a general hospital for the treatment of those diseases prevailing in this community.

We therefore insist you will place this question of direct practical assistance before the next Legislature, and that they, seeing our need, will be generously inclined to at least exhibit a just appreciation of the labors of the faculty.

J. A. DIBRELL, JR., M. D.,

WM. THOMPSON, M. D.,

W. M. LAWRENCE, M. D.,

Trustees Medical Department, A. I. U.

COL. GEORGE M. EDGAR, *President Arkansas Industrial University :*

DEAR SIR :—In accordance with your instructions I have prepared and have the honor to submit the annexed report of the operations, condition and prospects of the Branch Normal College of Arkansas Industrial University for the two years ending June 6, 1886, together with a number of recommendations which I have deemed it my duty to make, which I hope will afford all necessary information respecting the Institution that you may desire to have, and receive such consideration as, after careful examination, they may be entitled to upon their merits. I have endeavored to be concise without being obscure, and to present the leading points in the most simple and direct manner, and the result of my labors is herein submitted.

Very respectfully,

J. C. CORBIN,

Principal Branch Normal College.

BIENNIAL REPORT
OF THE
BRANCH NORMAL COLLEGE
OF THE
ARKANSAS
INDUSTRIAL UNIVERSITY.

PRELIMINARY.

THE BRANCH NORMAL COLLEGE.

It is deemed proper to preface the report proper with a very brief historical sketch, designed chiefly to afford the proper means of testing its present progress by a comparison with its previous condition. It was established in accordance with an Act of the General Assembly of the State, approved April 25, 1873; but, owing to political disturbances, was not put into operation until September 25, 1875. The present Principal had been sent by Governor Garland from Little Rock to Pine Bluff to open the School upon the first Monday in September; and, reaching the latter city early in August, had secured a building that could be made to answer the intended purpose, and had ordered some school

furniture, which was delayed in consequence of the boat upon which it was shipped sinking in Arkansas river.

At the above mentioned date it opened with seven students, which number had increased by the end of the year to eighty-four. The attendance for several succeeding years was as follows, viz: '78, 126; '81, 123; '82, 145; '83, 170; '84, 203. In 1882 the present school building was completed and was occupied January 30 of that year. The cost was about \$12,000 for building, grounds and furniture, which is not more than one-half the present value. In 1882 the first colored student that ever graduated and received a collegiate degree in the State was graduated from the Branch Normal College, the second in 1883. Four students graduated in 1884, and eight from the Normal course in 1885. About thirty have completed the short Normal course. Of the above mentioned students two are studying law, one at the law school of Boston University and one at Nashville; three are principal teachers in the public schools of Pine Bluff, Argenta and El Dorada, and many others are teaching in various portions of the State. The enrollment for the last year or two has been about two hundred each year.

TEACHING FORCE.

The teachers for the last few years and their salaries have been as follows:

Principal.....	\$1,500.
First Assistant.....	500.
Second Assistant	400.
Total	<u>\$2,400.</u>

Of this amount nearly the whole of the salary of the Second Assistant, as well as the ordinary incidental expenses of the school, has been paid from the receipts for tuition. Not one dollar has been expended for hiring a janitor, or for taking care of the building; that labor having been performed by the Principal. The records of the institution, account of tuition fees, and the preparation of the manuscript of the catalogue have all been attended to

by the same person. A large portion of the slating was produced in the same way, involving only the cost of material.

INVENTORY OF PROPERTY.

The good furniture in the building, purchased by the Board, consists of:

1. 34 recitation seats, 83 desks, 13 chairs, 8 stoves, 1 clock, one organ, and a few tools, axes, saw, scythe and hoe, a bell and a spherical black-board, or slated globe. There are, in addition to these, a few "home-made" articles, such as benches, shelving, etc. Some six hundred volumes of Congressional publications, including a few valuable scientific works upon Astronomical and Mineralogical topics, and 23 volumes of Appleton's Cyclopædia, about completes the list. The Principal has a fair library of text books, and a small collection of minerals, of which some use has been made.

CONDITION OF BUILDING.

The building is in good condition, ordinary wear and tear excepted. When deep snow falls upon the roof there are two or three places that leak. The walls of the assembly room, in which four large stoves are burning constantly during cold weather, are very dark and need kalsomining very badly. They have never been cleaned since the building was erected. No other repairs are specially needed at the present time.

THE GROUNDS.

The grounds are being gradually cleaned and the wood used as fuel. It is rather hard work to make a house comfortable with green pine, but the school has got along tolerably well in that respect, and there has been no special reason for complaint. The fence is all right; also the stiles. A large amount of brush-wood has been thrown into the bayou, on the north-west corner, and it seems to be filling up to some extent. The St. Louis, Arkansas & Texas railroad cuts off about one-sixth of an acre from the south-

east corner of the school lands, and has constructed a switch on it to the lumber mill, which about confiscate the piece of land. In front of the east fence the telegraph companies have erected their poles upon the school lands, all of which seems to me to be trespassing. The drainage of the grounds is now tolerably good.

DEPARTMENT OF STUDENTS.

During the past two years, and in fact during the whole time of my connection with the institution, the deportment of the students has been excellent. There has been no instance of malicious damage to the property, riotous conduct, or insubordination. While the zest for study has not been quite so eager as I desired, it has perhaps been as great as could reasonably have been expected under existing circumstances. While many of the students attend but a small portion of our annual session, it is really all they are able to do.

RECOMMENDATIONS.

With a view to the greater success and future efficiency of the Institution, I beg leave to offer the following suggestions, which if favorably received and means are provided to carry them out, will, I think, contribute largely to those ends. I think that all the things mentioned are real needs, and that the attendant expense need not be very great, viz:

1. A boarding hall, or dormitory. This would have a tendency to keep down the price of board for students; an important point, as citizens of the place who board students seem inclined to raise the price.
2. Some provisions for manual training, the more the better. The sewing machine, type-writer, a printing outfit, etc., etc., could easily be made of service.
3. Some apparatus—chemical, physical, mineralogical—would be of great value. I may mention an air-pump, blow-pipe, magnets, reagents, etc. Suitable provisions for the safe keeping of a small cabinet of minerals could be made, and even a small collection would be of great value.

4. The substitution of coal stoves, or heaters, for our present mode of warming, would be a great improvement, and the sale of the eight stoves we have and the wood on the land would meet at least a portion of the expense.

5. These changes would render necessary, as a matter of course, some additional aid to the teaching force; for instance, the employment of a janitor, or, as I once suggested to the Board, the paying of a salary of about ten dollars per month to three or four of the advanced students to hear one recitation per day of the junior students. It may be stated in reference to these suggestions that the necessary expense need not be very great. The dealers in chemical apparatus furnish an outfit for one or two hundred dollars which would be amply sufficient for present needs. Suitable buildings for manual training, boarding departments and dormitories would, of course, involve some expense, and there is great need of them. The other improvements suggested are comparatively inexpensive. In the above enumeration, the mention of a reading room and library was merely incidental, and it may be proper to mention that to secure a tolerably good library, in the course of time, renders necessary only some little provision for its safe-keeping and preservation. This provision being once made the library would, by gradual accretions, finally become an important feature of the institution, and the cost would be almost imperceptible.

BIENNIAL REPORT

OF THE

BOARD OF TRUSTEES

OF THE

ARKANSAS INDUSTRIAL UNIVERSITY

—TO—

HIS EXCELLENCY, SIMON P. HUGHES,

GOVERNOR OF ARKANSAS.

BY AUTHORITY.

LITTLE ROCK, ARK.
PRESS PRINTING COMPANY.
1889.

REPORT
OF THE
BOARD OF TRUSTEES
OF THE
ARKANSAS INDUSTRIAL UNIVERSITY.

To His Excellency, Simon P. Hughes, Governor of the State of Arkansas:

The Board of Trustees of the Arkansas Industrial University respectfully report that in compliance with the act of the Legislature, approved March 30, 1887, and known as the "Barker Bill," we have so reorganized the institution as to make the agricultural and mechanical features of its curriculum its most prominent characteristics.

Whatever of differences of opinion may have existed heretofore as to the advisability of the total change in the character of the institution, it must be confessed that it has greatly enlarged the usefulness of the University, notwithstanding the limited amount of money at the command of the Board. The education conferred by it has been rendered much more practical and more in accordance with the business needs of everyday life; and the youth of our State, appreciating this fact, are seeking the benefits of the University in larger number, and with a more earnest spirit than ever before in the history of the State.

That those of our ambitious youth who may wish to super-add to an agricultural or mechanical education other branches of learning may not be forced to go to other states, we have,

under section 7 of the act, provided for instruction in the Classics, upon payment of the nominal sum of \$10 per annum ; but that there might not be any discrimination in favor of any class of students, we have required all students alike to perform an equal amount of daily labor in the workshop or on the farm.

In accordance with the provisions of the act of Congress known as the "Hatch Bill," an Agricultural Experimental Station has been organized and placed under the control of the Agricultural Department of the University. A handsome and substantial brick building for the purposes of the Experimental Station has been erected at a cost of about \$4000, and it has been equipped with necessary apparatus and material at an additional cost of about \$4100.00 ; all of which has been paid for by the United States Government; and the experiments contemplated by the "Hatch Bill" are being conducted by the Director of the Station, together with his efficient corps of assistants, which promise highly beneficial results to the farmers of our State.

We have erected a substantial brick dormitory at a cost of \$17,200, having forty-eight rooms, the iron and wooden furniture of which, we are gratified to state, has all been manufactured by the students in the shops of the University, and under the regulations of which the cost of board has been reduced to an average of about \$8 per month per student, thus affording about ninety-six youths of the State an opportunity of obtaining an excellent education at the smallest practical cost.

New lands have been cleared and fenced and cultivated. Two substantial barns and a dairy building have been erected, cuts of which will be seen in the accompanying report.

Twenty-six head of stock have been purchased, and if the Legislature enlarge the farm, it is confidently believed that within a very few years the Agricultural Department will not only sustain itself from the annual sale of stock, but will afford the people of the State an opportunity of purchasing thoroughbred stock, about the qualities of which there will be no

doubt, and in the breeding of which there will be no deception.

Several new and improved agricultural machines have been added to our list.

An effort was made to secure a water supply by boring, but it proved unsuccessful, and has forced upon us the necessity of the cistern supply recommended in the report of the Professor of Engineering.

We feel that we should be remiss in our duty if we failed to urge the necessity of increasing both the means and the discretion of the new Board to be appointed by your successor in office.

That the University may be made one from which the the largest amount of benefits with the least outlay to the student may be obtained, we deem it alike necessary and economical that the General Assembly make adequate appropriation as early as practicable; and, in this connection, we would respectfully make the following recommendations:

The shops in the Mechanical Department should be removed from the basement of the main University building, where they have been placed by existing law, and a separate building erected for us in all the branches of the Mechanical Department. The boiler under the building is a perpetual menace to the safety of the building and lives of the occupants. It has been demonstrated that the smoke from forges and foundry cannot be prevented from permeating many of the recitation-rooms above, and the powerful vibrations in a building of this height not constructed for the use of machinery, it is thought, will ultimately very much damage the structure. Besides all this, the space is inadequate to the needs of the department, and insurance is increased by about \$1,000 per year.

We recommend that girls be restored to the privileges of the institution, from which they are now excluded by law. Their fathers, being tax-payers, should have the same privileges for their daughters as the State provides for their sons. The co-education of the sexes has become almost the rule in institutions of this kind, and in some of the oldest and *most* renown-

ed educational centres in our country, heretofore exclusively male, annexes for females have recently been organized and put in successful operation. From its organization, this University has received both sexes on equal terms, and has been as successful in advancing and training girls as it has in the case of males. It is true that the present law from and after this date only excludes females from being beneficiaries, and they would, therefore, still retain the privileges of paying students, but this unjust discrimination should be removed, and equal privileges and opportunities afforded the sexes. In the event that females are continued the privileges of beneficiaries, we recommend that a dormitory building be provided for them. You will therefore find an appropriation for covering this expense in the list in the conclusion of this report.

An addition to the dormitory for the males, which the special appropriation of the last General Assembly was inadequate to meet, is much needed; also heating apparatus, and a kitchen and dining hall in connection with the dormitory building. Estimates for these additions are appended.

It is in every way desirable that the military organization be continued. The arms and accouterments now on hand belonging to the General Government, are old, and in many respects unserviceable. We recommend that the General Assembly make provisions to indemnify the Board, so that the bond required by the General Government in order to obtain new and improved arms and accouterments, may be made by the Board. It cannot be expected that private individuals will enter into obligation to secure the use of those arms for the State, unless the law-making power provide for their safety.

In the matter of student labor, the law providing for three hours of work each school day has been as closely complied with as the limited capacity of the shops and area of arable land would permit. You will observe that there is a surplus in the student labor fund. This arises from the fact that our caution in allowing hourly pay in the two leading departments, prevented us from using as much of the fund as justice to the student and our present experience would suggest; and not-

withstanding that we recommend that the shop capacity be very greatly enlarged, and a large body of land be added to the farm, yet we would earnestly advise that the working hours of the student be reduced from three to two hours each school day. Under the three hour system it became necessary to allow hours employed in field work in surveying, mechanical drawing and laboratory work, to be counted as "work," but for this no pay was allowed. It will be seen how impossible it will be to employ a large number of students three hours each day in shop or farm work. The three hours trenches too much on class work for the student to make that progress in his studies he has a right to expect. The plan of paying for student labor and the boarding system pursued in the dormitory building, certainly places the worthy indigent youth of our State in a position to obtain a higher education at the smallest possible outlay of money.

Permanency in the teaching corps is essential to the stability of a school of the character of this University. To a great extent, changes, sudden and sweeping, of the heads of departments have well nigh wrecked the fortunes of the Institution. The large majority of competent educators are men of limited means, and it is certainly reasonable that they will accept the places, all other things being equal, where the best salaries are paid. Some of the best instructors our Institution has ever had, have been taken away from us by other schools offering larger salaries, and their fixedness of purpose and obligation of contract has probably only kept some here during the year just closing. It is generally the most accomplished and capable that are thus sought for, and when lost there are many chances to one that the position will not soon be equally filled. The salaries for President and Professors in the Arkansas Industrial University are lower than those of any State University in the Union, where the commonwealth is equal in population and resources to Arkansas. We desire to recommend that the salaries be left to the sound discretion of the Board of Trustees, who, having no personal or pecuniary interest in the matter, are certainly better acquainted with the char-

acter and ability of the teaching corps and the needs of the Institution than any legislative body not so intimately connected with them. Should our recommendations in this regard be favorably received, we have asked for a small sum in the general appropriation, to supplement salaries should the exigencies of the school require it. But should the General Assembly in its wisdom deem it best to retain fixed salaries we would earnestly advise that they be increased in some particulars.

The lands belonging to the University are inadequate to the full development of the rapidly growing Agricultural Department. We advisedly suggest an appropriation for the purchase of lands adjacent to the institution; as the department to which this matter pertains is rapidly becoming, and soon will be, the leading industry of the University, the purchase of a large additional area of land should not longer be delayed. Sixteen thousand dollars is asked for this purpose, and it can now be judiciously expended in that way.

The water supply for the University has ever been a difficulty—a problem yet far from solution. A scheme has been projected by the Professor of Civil Engineering by which an adequate supply may be obtained for general use as well as for a fire service. The reduction in insurance which would result, is to be considered, as well as an abundant supply of the best potable water. An appropriation for this purpose is asked based upon careful estimates made in connection with the scheme above referred to.

The estimated current expenses for the ensuing two years are \$76,150. The income to the institution from the county of Washington for the same time is \$16,000, and from the city of Fayetteville \$4800. The estimated receipts for tuition and matriculation fees is \$2000, aggregating a total of receipts amounting to \$22,800; this, being deducted from the \$76,150, leaves a balance on current fund to be appropriated by the General Assembly of \$53,350. In addition to this appropriation for current expenses, we ask for a special appropriation of \$85,968, as follows:

For new shop building and additional equipments..	\$ 25,500 00
For dormitory for girls and improvements on boys' dormitory	27,000 00
For additional land	16,000 00
For water supply and fire service.....	9,468 00
For student labor	5,000 00
For insurance, unless the shops are removed, on all the buildings	3,000 00
Total	\$ 85,968 00

For more specific details as to the needs and management of the institution, as also for its financial condition, we refer you to the reports of the President of the Faculty, the Superintendents of Agriculture and Mechanic Arts, and the financial statement of the Secretary and Treasurer, which accompany this report.

We are pleased to report that the Branch Normal School at Pine Bluff for the education of colored youth, is succeeding admirably under the management of Prof. Corbin and his assistants. The school is year by year sending out a number of well trained colored teachers who become useful and efficient instructors in the colored public schools. In view of the necessity for the education of the colored race, we ask a continuance of the liberal policy heretofore extended to this school by the General Assembly. For a detailed statement of the condition of the school and its requirements, we respectfully refer to the report of Prof. Corbin, Principal of the school.

In conclusion, we deem it not inappropriate to say that in giving back the trust with which your Excellency and the Honorable Senate have charged us, we most earnestly hope that our successors may be as deeply impressed as we are with the conviction that the importance of this institution, as now organized, is not to be measured in dollars and cents, and that the measure of the appreciation of its benefits will be, in the eyes of the world, the measure of the civilization of our people.

The dissemination of useful and scientific information among the farmers of the State by the Experimental Station has already begun to yield excellent fruit, but the joint education of both the brain and the brawn of our youth, teaching them the theory of scientific agriculture and the mechanic arts and at the same time instructing them in the practical application of these theories, not only confers upon the beneficiary a capital of learning for which there is always a demand, but is sending out a constantly widening influence that cannot fail to impress itself upon the whole country and that in the very nature of things must elevate the character and reputation of our State in such a manner as to challenge at once the enlightened esteem of the outside world and the patriotic pride of every citizen of Arkansas.

In the confident hope that the General Assembly will not permit the good work so auspiciously begun to lag for want of ample funds, we beg to remain,

Very respectfully your obedient servants,

W. B. WELCH,
W. M. FISHBACK,
JAMES MITCHELL,
W. F. AVERA,
J. W. KEESEE,
C. M. TAYLOR,
Board of Trustees.

BIENNIAL REPORT
OF THE
PRESIDENT OF THE ARKANSAS INDUSTRIAL UNIVERSITY
TO THE
HONORABLE BOARD OF TRUSTEES.

ARKANSAS INDUSTRIAL UNIVERSITY,
December 1, 1888.

To the Honorable Board of Trustees of the Arkansas Industrial University:

GENTLEMEN: This University was organized by an act of the Legislature, based on the well known "Land Grant Act" of Congress of 1862, and supplemented by munificent State appropriations, besides liberal donations from the county of Washington and the city of Fayetteville. Commencing work in 1872, the Institution has moved forward, always holding a high standard of scholarship. So marked is this fact that the Alumni have almost without exception, held high positions in business, society and State. While these are truths that cannot be disputed, many claimed from year to year that the University was not performing the work for which it was designed, and a clamor for the development of the more practical features arose all over the State, urging the prominence of Agriculture and Mechanic Arts. It must be confessed that but little attention, at least of a practical character, had been paid to these subjects, though a beginning had been made. I am informed that the Legislature has been repeatedly asked for appropriations previously to the grand

move inaugurated in the General Assembly of 1887, resulting in the enactment of the law known as the "Barker Bill." By it the Agricultural and Mechanical Departments received more liberal aid, and the manual labor of the male students was rigidly exacted. Under this law, your honorable body has made grand success in bringing forward the industrial features of the school, by judiciously executing the spirit and letter of the law without excluding the branches previously pursued. Many opponents to the departure, on visiting the institution, are obliged to acknowledge the advantages of the money-making, business-like training here received by the youth of our State.

In order to provide for the instruction required by law, you needed many additional officers and assistants in the Agricultural and Mechanical Departments. Resignations necessitated the employment of almost a new corps of teachers in the Preparatory Department. The resignation of Professors called for new men. Altogether, in the summer of 1887, we changed to almost a new body of instructors. These ladies and gentlemen, entering upon their duties, soon caught the spirit of the Institution, and, as a rule, have faithfully assisted the remaining members of the old corps in performing work, which we hope will meet your approval. While we regret to lose the valuable men and women who left us, we are consoled by the knowledge that, in your good judgment, you have selected others who are zealous and efficient. My thanks are due my colleagues for their wise counsel and co-operation. Our faculty-meetings have been most harmonious, every man having the interest of the University paramount.

Reference to the accompanying catalogue will show our attendance larger than that of any previous session, at least so far as recorded for many years in the past, amounting to four hundred and forty-four for the session just closed. These, together with those of the Medical Department and the Branch Normal College, make the good showing of 729; but we have room for a much larger number, and believe the increased interest in the University, together with the facilities now offered,

and others which can be added with comparatively little expense, will soon induce several hundred more to attend.

I am happy to report the general good conduct of our students. While it is true a few have been dismissed, as was expected, yet, altogether, in many years experience, I have never found a more courteous and easily governed body of students. They have made a fine name in the community. The good people of Fayetteville have our thanks for their hearty co-operation.

After a succinct statement with reference to the different departments, I leave further details for the reports herewith appended.

DEPARTMENT OF MECHANIC ARTS AND ENGINEERING.

A visit to the machine shops will show you that with the appropriation allowed valuable additions have been made to the limited stock previously purchased; and reference to machinery invoices proves that this has been done at a large reduction from schedule prices. The articles are of the latest and most improved patterns, and will compare favorably with the equipments of other leading institutions. For lack of more machines we have not been able to accommodate more than about fifty students at one time. The capacity should be at least doubled.

According to instructions and for want of funds to construct separate buildings, the south end of the basement of the main University building was equipped for the six shops, viz., wood-working, iron-finishing, foundry, forging, moulding and painting, besides a dressing-room. Experience has clearly shown the location of the shops in the basement of our magnificent main building to be altogether injurious; for the smoke from the furnaces and the jar of machinery will gradually deface and otherwise damage the property: moreover, the rates of insurance are materially increased, and there is no economy obtained. I would respectfully recommend the construction of new buildings for shops and boiler rooms according to drawings and specifications furnished by the Superintendent of Mechanic Arts and herewith transmitted.

The Adjunct Professor, Superintendent of the Shops, should be relieved of his afternoon drawing class in order that he may give personal supervision to the work of the shops, and a new assistant appointed to take charge of the drawing and render such other assistance in theoretical and practical instruction as he may be able to perform. We hope for an appropriation commensurate with the needs of this, one of the most important departments of the University.

DEPARTMENT OF AGRICULTURE.

The officer's report shows the large amount of improvement in building fences, clearing land, constructing barns, purchasing implements, raising stock, etc. The comparatively small funds and the lack of arable lands have prevented the performance of this work on as large a scale as the interest of the department demands, yet we believe the officer in charge under your direction, has done all that could be done, and has displayed excellent judgment in selecting his assistants to further the work assigned.

While the herd is not large, it has been selected from several of the best breeds and is well cared for, as evidenced by the number of first premiums awarded at some of the best stock shows in the West.

This department needs more land, so that fields for grain and pastures for stock may be more liberally provided. Our neighboring state, Mississippi, has a model stock farm connected with her agricultural college. It was my privilege to visit the college last winter and learn some of the details leading to the great success there attained on poor lands that had been regarded as almost useless. About three hundred head of cattle were on the place and they were well provided with finest hay, ensilage and other food, made on the college farm. The students' mess-hall was supplied with the best beef, slaughtered on the place. Thus a market was created and supplied within the college grounds. The annual sale of fine stock, the home market for the beef and the fine creamery butter supplied from the farm and neighborhood, had spread a knowl-

edge of husbandry and love for improved farming throughout the State and created within the students a fondness for the work that will add thousands of dollars to the agricultural results. Principally on grasses and stock, I believe, the A. and M. college of Mississippi made its name. Your University is located in a stock country, and with comparatively little expense can be the means of gradually disseminating through the State the very finest acclimated stock, and thus of stimulating a thrift in this direction never before experienced. Let us have more land.

The general farm with capital to back it, will show wonderful results on a large scale and serve a valuable purpose in stimulating a fondness for agriculture and in teaching improved methods; yet it occurs to me we should have two or more small farms as models for farmers of but little means, so that a young man of limited capital may learn as nearly as possible where to plant every dollar and how to make it grow—show a boy what he can best do with two or three thousand dollars. Nearly all our boys are poor, and cannot afford to farm on such a scale as we see at the majority of agricultural colleges. I know no college that is trying this model farm plan; but it may be worth a trial, and hence I submit the same to your judgment as to its feasibility.

THE EXPERIMENT STATION.

Under the act of Congress well known as the "Hatch Bill" we are fortunate in having the Experiment Station connected with the University. A new brick building containing laboratories, store-rooms, offices, etc., has been constructed in the northwest corner of the campus. It is well supplied with gas and apparatus. The plan and dimensions are described in the catalogue of 1888, appended herewith. This station has three branches located in different parts of the State. The Director is fortunate in the selection of industrious and evidently competent men as Veterinarian, Horticulturist, Chemist and Entomologist—all of high attainments in their respective specialties.

PRACTICAL WORK.

Manual labor for three hours per day besides the necessary theoretical work required has proven burdensome on our students. This is more work than that exacted by many other leading agricultural and mechanical colleges. I would respectfully recommend that the Legislature be requested to so amend the law as not to require more than two hours manual labor, and that all practical work cease with the Sophomore year, so far as it is compulsory, inasmuch as the Short Agricultural Course closes with this year. This will give the students time for more extensive reading in their special or general courses during the remaining period of college attendance.

DEPARTMENT OF ENGLISH AND MODERN LANGUAGES.

Your attention is respectfully directed to the important work here done. The Professor in charge has been assisted recently by a young lady who graduated with honor from the University. He needs further assistance, and I would recommend that the same assistant be continued, as she has proven to be thoroughly competent, and that she be otherwise employed and appointed as a regular assistant.

DEPARTMENT OF BIOLOGY AND GEOLOGY.

The recommendations made by the Professor in charge of this department are respectfully commended to your favorable consideration. His work forms a part of two of the leading departments of the University and should be well supplied with apparatus.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

According to the original "Land Grant Act," and for the purpose of maintaining discipline and cultivating manly and soldier-like bearing, this department has an important office in training our young men. The number of hours devoted to shops and field has prevented the Military Officer from having as much time as is desirable for drill; yet he has created a

commendable *esprit de corps*, and otherwise attained marked success. He has not only instructed in military tactics, but has performed much detail work as Commandant. You are to be congratulated upon the wise selection of this army officer, for no member of our Faculty shows deeper interest in the general welfare of the school. Having had the honor to preside over another institution at which officers of the army were detailed, I am prepared to say, without disparagement to these gentlemen, I have not seen the superior to the one here assigned. As an assistant in discipline he is invaluable.

We would be pleased to see this department well equipped with improved arms and ammunition, which would be freely furnished by the General Government on a small bond.

DEPARTMENT OF MATHEMATICS AND LOGIC.

By reference to the report of the Professor in charge, you will see a request for a small appropriation. I commend the same to your favorable consideration. The report is necessarily short, as he has been in office only a few weeks.

PREPARATORY DEPARTMENT.

The preparatory classes have been much crowded. Many students enter the University before they are thoroughly prepared for college work. This will continue to be the case until our public schools are enabled to have longer sessions. As the head of the state school system, the University looks with much anxiety to the time when the country school can be taught eight or nine months in the year. We are glad to see a large number of districts voting a five-mill tax and thus extending their school sessions. This is an advantage not enjoyed by every state.

The Senior Assistant has rendered valuable services in organizing new classes and performing other work than that of teaching. I would suggest the Assistant in Drawing and the Assistant in English above recommended be assigned some work in the Preparatory Department, and thus for a while at least obviate the necessity of employing additional assistants.

However, should the Department still become crowded, we would respectfully ask authority to temporarily appoint teachers to be approved by the Board.

ACCREDITED SCHOOLS.

For the better preparation of students for the University, the public and private schools of the State should be stimulated to regulate their work with reference to the University curriculum and standard of scholarship. To further this, we would recommend that the Faculty be authorized to draw plans by which, under specified conditions, schools of the required standard may have the privilege of entering their pupils on certificates of proficiency. This has been done to a great advantage in other states.

The whole school system of the State should be gradually graded up to the University. Frequently students arrive expecting to enter certain classes, but are sadly disappointed when they fall far below.

FREE-HAND DRAWING AND INDUSTRIAL ART.

Your attention is invited to the report of the lady in charge. The young ladies, if retained, should be taught not only the arts here specified, but all practical work by which they can afterwards make a living. Telegraphy, stenography, printing, cutting, fitting, dress-making, cooking, etc., are among the arts suited to the sex. This should be an industrial school for both boys and girls.

The tax-payers of the State have daughters as well as sons to educate. Why should they not have equal advantages for both sexes? By reference to statistics collected in this office, it may be seen that over seventy per cent of the leading universities and colleges have both sexes, and the ratio is annually increasing. Only a few days ago Columbia College, New York, arranged for a "Women's Annex." Harvard and others had previously thought it wise to admit women. We know from experience that, under proper management, co-education is an advantage to both sexes.

Men have sold property in other parts of the State and moved here to educate their daughters.

Your honorable body is urgently requested to ask for a repeal of the law excluding the girls from beneficiary advantages.

YOUNG LADIES' DORMITORY.

The young ladies should have a suitable building as dormitory and boarding-house. This house should be constructed with reference to health, comfort and economy. It should be complete in all its appointments and be supplied with steam heating apparatus, laundry, bath-rooms, etc. The rooms should be neatly furnished. The employment of a competent matron, assisted by a house-keeper and cooks would be necessary. The girls could attend to their own apartments, and by arrangement of details in squads, take care of the dining-room. The building should accommodate at least two hundred students.

BOYS' DORMITORY.

Through the liberality of the last Legislature an elegant dormitory for male students was provided. It is indeed a building of credit to the State, and affords the young men neat and comfortable quarters free of charge. By this and the boarding arrangement connected, many who otherwise would have to remain at home can at a very small expense have the advantages of the University. The cost of table fare averages less than \$7.50 per month. The entire cost of board, furniture, washing and lights, need not exceed \$10 a month per annum.

The amount appropriated was not sufficient to supply heating apparatus, bath-rooms and kitchen. The old frame building has been used for kitchen and dining-room. We hope the next Legislature will complete this good work.

WATER SUPPLY.

Your attention is called to the report of the Professor of Engineering, who had this matter under consideration. We are much in need of a good water supply.

LIBRARY.

The accompanying report makes important recommendations regarding the library. Cases should be made and the books should be catalogued. The former can be economically and efficiently made in the University shops. I would recommend that the Librarian be employed to catalogue the books during the winter vacation.

MUSIC DEPARTMENT.

The small salary does not justify the employment of the accomplished lady now in charge. To insure entire success, I would recommend that this lady or some other competent person be paid a salary adequate to command the best talent, and that the whole time of the teacher be devoted to the work in the University.

MEDICAL DEPARTMENT, LITTLE ROCK.

The gradual and substantial advancement in the usefulness and reputation of the Medical College is a source of much gratification.

BRANCH NORMAL COLLEGE.

Your attention is called to the accompanying report of the Principal of this Department. We are glad to see the commendable zeal which he displays in the education of his race, and believe he is accomplishing much good in their moral and intellectual advancement.

CONCLUSION.

From correspondence and other sources we are led to conclude that, through your wise management under the new law, our University in all its branches is meeting with a success and public commendation most encouraging. The advantages now enjoyed, together with those which can be acquired with comparatively little additional cost, will, we believe, commend themselves to our entire people, and be worth more than money in drawing intelligent and industrious immigrants to our great State.

For the blessings enjoyed by our school let us ever render thanks to the Giver of all good.

I have the honor to be, most respectfully, your obedient servant,
E. H. MURFEE, *President.*

REPORT OF J. L. CRAVENS, SECRETARY AND TREASURER, ARKANSAS INDUSTRIAL UNIVERSITY.

DECEMBER 3, 1888.

CURRENT EXPENSE ACCOUNT.

1886.			
June	To amount	balance on hand last report	\$ 1,807 71
July 5		J. D Letcher	2 50
.. 5		State Treasurer current expense	6,000 00
.. 7		State Treasurer regents salary	250 00
.. 7		Washington County	180 00
.. 9		Col. Edgar	16 88
Sept. 25		sundry students' diplomas	42 50
Oct. 4		Col. Edgar	3 40
.. 13		Grother, for old tin	19 00
.. 13		sundry students' tuition	500 00
.. 13		sundry students' boarding	500 00
.. 13		State Treasurer current expense	7,000 00
.. 23		State Treasurer regents salary	250 00
Nov. 15		sundries	15 80
Dec. 16		sundry students' boarding	600 00
		Grother, for old pipe	80
1887.			
Jan. 14		sundry students' boarding	600 00
Feb. 15		Washington County	5,000 00
March 9		sundry students' boarding	600 00
.. 24		Fayetteville	2,450 00
April 5		sundry students' boarding	200 00
.. 5		sundry students' tuition	800 00
.. 12		students' library deposit	54 00
.. 30		Washington County	2,360 00
.. 26		Fayetteville	673 18
.. 30		sundry students' tuition	300 00
.. 30		sundry students' boarding	140 00
.. 30		Thorp, for old tin	9 40
May 16		Purinton, for forage	5 05
.. 28		Howell, for apples, etc.	2 50
.. 28		sundry students' tuition	141 10
.. 28		sundry students' boarding	198 35
By amount expended			\$ 28,838 81
balance on hand			1,882 81
		\$ 30,721 62	\$ 30,721 62

CURRENT EXPENSE ACCOUNT.—Continued.

		CONTRA.		
1886.				
June	5.	By amount to Pal Tye, whitewashing shop	\$	10 00
..	5	J. D. Whilton, labor		3 91
..	7.	W. L. Blanks, library department		2 00
..	7	J. H. Hobbs, library department		2 00
..	8	G. A. Warren, library department		2 00
..	9	J. E. Wheeler, order of board		35 00
..	9	A. Webb, library department		2 00
..	9	W. R. Henry, library department		1 80
..	11	Lee Treadwell, library		30 00
..	11	Lee Treadwell, library department		85
..	12	W. E. Thompson, trustee		57 00
..	12	S. P. Hughes, trustee		21 00
..	15	Charles Coffin, trustee		89 50
..	15	J. W. Martin, trustee		74 95
..	15	J. P. Eagle, trustee		87 80
..	15	J. W. Brown, trustee		115 00
..	15	T. M. Gunter, trustee		40 00
..	15	J. T. Reynolds, repairs		2 10
..	15	H. Sweitzer, bill		2 50
..	16	E. B. Harrison, bill		2 00
..	16	Dee McCrimmon		4 50
..	16	Geo. M. Edgar, salary		100 00
..	16	J. T. Lantrip, bill		10 60
..	17	J. L. Cravens, for diplomas		20 65
..	17	Geo. M. Edgar, telegrams		3 45
..	19	J. E. Vaughan, bill		55 00
..	19	John Harman, labor		9 50
..	19	J. F. Howell, for Lantrip		2 50
..	19	J. F. Howell, bill		15 00
..	21	E. L. Fisher, freight		2 00
..	21	G. D. Purinton, for library		10 00
..	21	J. F. Howell, for library		10 00
..	21	J. F. Howell, normal account		100 00
..	21	J. M. Whitham, bill		4 00
..	21	J. M. Whitham, library		3 65
..	21	R. H. Willis		1 00
..	23	J. D. VanWinkle, bill		3 40
July	1	J. C. Williams & Co		1 90
..	1	Geo. M. Edgar, salary		150 00
..	1	W. W. McCart, janitor		39 00
..	1	J. T. Lantrip, labor		18 00
..	1	J. A. Reed, bill		2 80
..	1	A. Volner, bill		19 10
..	2	Mitchell & Bettis, bill		40 20
..	6	J. T. Lantrip, janitor		5 00
..	7	M. Coffey, bill		5 35
..	8	H. K. Wade, express		80
..	9	W. A. Gleghorn		1 00
..	9	J. C. McClellan		17 40
..	10	Conner & White, bill		10 50
..	10	J. L. Cravens, diplomas		16 15
..	10	L. B. Lantrip, covering barn		12 00
..	13	R. H. Willis, expense account		53 31
..	13	Conner & White, bill		3 00
..	15	J. T. Lantrip, janitor		15 00
..	16	J. F. Howell, salary		150 00
..	16	E. L. Fisher, freight		9 10
..	17	Geo. D. Purinton, postage		2 00
..	19	G. W. Baldrige, labor		45 03
..	19	H. K. Wade, express		8 00
..	19	E. H. Murfee, salary		50 00
..	21	Geo. M. Edgar, clerk		6 00
..	21	S. E. Marrs, bill		10 00
..	22	McIlroy & Co., draft		182 25
..	24	J. T. Lantrip, janitor		5 00
..	24	Geo. M. Edgar, salary		250 00
..	26	Geo. M. Edgar, expense account		100 00
..	27	Geo. D. Purinton, salary		50 00
..	28	Eimer & Amend, chemical account		92 99
..	28	Thos. Jennings, handling lumber		4 00
..	30	G. W. Baldrige, labor		26 75
..	31	J. T. Lantrip, janitor		5 00
..	31	J. T. Lantrip, for coal bank		10 00
August	2	H. Sweitzer, bill lumber		98 13
..	5	L. B. Lantrip, bill		6 00
..	10	A. B. Lewis, bill		18 45

CURRENT EXPENSE ACCOUNT.—*Continued.*

1886			
August 11.	By amount	William Hopkins, labor	\$ 4 80
11.		J. T. Lantrip	20 00
12.		J. L. Cravens, salary	125 00
12.		W. L. Call, bill	1 00
13.		L. B. Lantrip, labor	2 00
13.		George D. Purinton, salary	50 00
14.		Byrnes & Babb, repairs	92 62
21.		Byrnes & Babb, repairs	43 25
21.		H. K. Wade, express	70
23.		W. P. Yarbrough, janitor	1 75
24.		J. T. Lantrip, janitor	5 00
24.		Kellogg & Co., bill	6 58
24.		William Hopkins, janitor	10 00
28.		Dick Irvin, janitor	5 15
28.		William Gleghorn	7 20
28.		William Hopkins, labor	4 50
28.		Byrnes & Babb, bill	5 50
28.		Byrnes & Babb, repairs	28 50
30.		J. M. Whitham, salary	50 00
39.		B. H. Stone & Co, repairs	6 25
31.		George M. Edgar, salary	250 00
September 1		W. H. Whitlow, bill	8 85
1.		W. H. Whitlow, bill	10 90
1.		Curry & Harrison, bill	75
1.		J. T. Lantrip, janitor	5 00
1.		J. T. Lantrip, labor	10 00
2.		E. B. Harrison, bill	3 64
2.		Byrnes & Babb, bill	12 72
2.		C. Dale, bill	35 53
2.		C. Dale, bill	15 88
2.		C. Dale, bill	4 72
2.		C. Dale, bill	7 40
2.		W. H. Hill, bill	4 00
4.		E. B. Harrison, bill	9 35
4.		E. B. Harrison, bill	11 65
4.		E. B. Harrison, bill	3 65
4.		Lee Treadwell	6 75
4.		Lee Treadwell	4 10
8.		G. W. Baldridge, labor	19 50
9.		Pettigrew & Patridge	15 00
9.		W. M. Dopp, janitor	2 50
10.		J. L. Kuesal, bill	1 40
10.		G. D. Purinton, salary	50 00
11.		William Hopkins, labor	8 70
11.		H. K. Wade, express	9 96
13.		J. T. Lantrip, janitor	15 00
15.		Lee Treadwell	10 50
15.		J. P. Marbut, telegram	50
18.		Jack Foster, labor	8 75
18.		W. J. Ward, janitor	90
21.		J. P. Marbut	1 00
21.		H. Edwards, library	10 00
21.		G. D. Purinton, chemical account	30 00
21.		C. Dale, fuel	907 60
21.		C. Dale	36 31
21.		C. Dale, bill	50 97
22.		G. M. Edgar, salary	100 00
22.		Lee Treadwell	10 25
23.		William Hopkins, labor	5 50
23.		J. M. Whitham, salary	100 00
23.		J. M. Whitham, library account	6 80
24.		J. L. Cravens, paid Trustees	30 20
24.		J. F. Howell, expense account	48 50
24.		E. C. Weimer, salary	80 00
24.		L. Hall, salary	80 00
25.		John Edgar, messenger	2 25
25.		J. D. Lantrip, janitor	5 00
25.		F. B. Reid, freight bill	90
28.		George D. Purinton, expense account	60 50
28.		George D. Purinton, salary	160 00
29.		A. B. Classon, bill	102 46
29.		J. L. Kuesal, bill	4 80
30.		A. K. Wade, bill	18 80
30.		J. T. Lantrip, janitor	16 00
30.		J. T. Lantrip, bill	10 00

CURRENT EXPENSE ACCOUNT.—*Continued.*

1886			
September 30	By amount	J. T. Lantrip, bill	\$ 6 00
30		George M. Edgar, salary	150 00
30		Lee Treadwell	10 25
October 1		Willard French, labor	30 00
1		W. E. Anderson, salary	80 00
1		J. E. Oliver, telephone	6 00
2		H. Edwards, salary	150 00
2		W. C. Cardwell, bill	14 65
2		R. H. Willis, salary	150 00
2		J. M. Whitham, salary	100 00
2		B. Greene, salary	80 00
2		A. F. Lewis, salary	80 00
2		Rosebud Moss, salary	80 00
2		J. T. Reynolds, repairs	9 20
2		D. M. Harbison, bill	43 72
2		Lee Treadwell	10 25
2		Mulholland & Lake, bill	112 63
2		E. H. Murfee, salary	100 00
2		G. W. Macon, salary	80 00
4		J. D. Vanwinkle, bill	2 05
4		F. B. Reid, freight bill	3 18
8		John B. Edgar, messenger	3 00
8		J. T. Lantrip, janitor	10 00
8		H. Edwards, salary	50 00
11		Lee Treadwell	11 25
12		E. McKendree	70
12		H. K. Wade, bill	5 00
12		A. B. Lewis, bill	49 10
12		B. L. Mills, library	2 00
12		J. E. Watson	1 50
12		W. F. Shreve, bill	6 35
13		J. C. McClellan, bill	2 50
14		J. A. Reid, bill	3 00
14		F. B. Reed, freight bill	20 59
16		J. A. McCormick	4 00
16		R. H. Willis, library	1 50
16		J. T. Lantrip	5 00
16		Lee Treadwell	14 80
16		E. H. Murfee, expense account	71 25
16		G. W. Baldrige, labor	29 50
18		G. D. Purinton, salary	25 00
23		J. M. Whitham, library	25 75
23		J. M. Whitham, physics account	110 96
23		George M. Edgar, salary	100 00
23		Lee Treadwell	14 70
25		J. D. Deadrick	2 00
25		John B. Edgar, messenger	3 00
26		Byrnes & Babb	36 50
27		J. S. Watterson, library	6 00
27		McIlroy & Co., draft	175 00
30		E. H. Murfee, salary	150 00
30		G. M. Edgar, salary	150 00
30		E. C. Weimer, salary	120 00
30		L. M. Hall, salary	120 00
30		G. D. Purinton, salary	150 00
30		Lee Treadwell, bill	13 25
30		J. T. Lantrip, janitor	46 75
30		H. K. Wade, express	2 30
30		A. H. Lantrip	12 00
November 1		J. C. Williams & Co.	1 00
1		H. Edwards, salary	100 00
1		W. French, labor	30 00
1		R. H. Willis, salary	150 00
1		J. M. Whitham, salary	150 00
1		J. F. Howell, salary	150 00
1		A. F. Lewis, salary	80 00
1		G. W. Macon, salary	80 00
1		J. B. Greene, salary	80 00
1		R. Moss, salary	80 00
1		W. E. Anderson, salary	80 00
2		W. H. Whitlow, bill	2 10
2		W. H. Whitlow, bill	4 15
2		C. Dale, bill	26 13
2		C. Dale, bill	3 19
3		Annie Pettigrew, bill	30 00

CURRENT EXPENSE ACCOUNT.—Continued.

1886			
November 5	By amount	Mulholland & Lake, bill	\$ 126 68
5		D. M. Harbison, bill	34 12
6		A. Volner, bill	7 00
6		A. Volner, bill	2 75
6		A. W. Shreve, bill	8 00
6		J. T. Lantrip, janitor	5 00
6		Lee Treadwell	26 25
8		A. B. Lewis, bill	87 20
10		L. E. Archias	60
11		G. W. B. Ldridge, labor	19 70
11		John B. Edgar	3 00
12		E. L. Fisher, bill	6 21
3		G. D. Purinton	3 95
3		Lee Treadwell	17 25
3		J. M. Whitham, physics account	130 60
3		J. M. Whitham, salary	50 00
15		J. T. Lantrip, janitor	22 50
17		E. L. Fisher, bill	13 07
17		A. Chapman	1 25
17		Leigh & Co., bill	25 43
17		Leigh & Co., bill	52 47
18		H. Edwards, salary	50 00
19		J. A. McCormick	11 00
19		McIlroy & Co., draft	250 40
20		Lee Treadwell, bill	12 25
27		W. P. McNair, freight bill	22 05
27		J. M. Partridge, freight bill	7 50
29		Annie Pettigrew	30 00
30		K. V. King, bill	15 00
30		H. M. Schaad, bill	15 00
December 1		J. P. French, janitor	44 38
1		H. Edwards, salary	100 00
1		G. M. Edgar, salary	250 00
1		W. French, labor	30 00
1		R. H. Willis, salary	150 00
1		E. H. Murfee, salary	150 00
1		G. D. Purinton, salary	25 00
2		J. F. Howell, salary	150 00
2		A. F. Lewis, salary	80 00
2		J. B. Greene, salary	80 00
2		E. C. Weimer, salary	40 00
2		R. Moss, salary	80 00
2		L. M. Hall, salary	40 00
2		W. E. Anderson, salary	80 00
2		W. C. Cardwell, bill	12 20
4		John Edgar	1 70
4		Lee Treadwell	29 50
6		W. N. Crozier	10 00
6		H. Murfee	1 50
6		Curry & Harrison	9 00
6		Mulholland & Lake	103 81
6		A. Kennedy	13 51
7		E. B. Harrison, bill	24 40
7		E. B. Harrison, bill	4 00
7		E. B. Harrison, bill	20 65
7		O. C. Lee	5 71
7		J. W. Southerland	15 06
8		K. V. King, salary	75 00
9		A. B. Lewis	79 35
9		J. A. McCormick	36 64
10		C. Dale, bill	19 30
11		J. M. Whitham, salary	100 00
11		S. L. Shaver	17 50
11		A. W. Shreve	12 00
11		Lee Treadwell	14 25
11		E. C. Weimer, salary	40 00
11		L. M. Hall, salary	40 00
11		H. Murfee, messenger	1 50
15		R. H. Willis, library	20 00
15		G. D. Purinton, salary	100 00
15		W. R. Hervey, library	2 00
15		W. H. Phillips	3 23
15		J. H. Turner	3 23
16		F. Anderson, fuel	10 00
17		J. A. Doak, library	2 00

CURRENT EXPENSE ACCOUNT.—Continued.

1886.		
Dec. 20.....	By amount G. D. Purinton, chemical account.....	\$ 5 30
20.....	H. Murfee.....	1 50
21.....	J. L. Cravens, to pay trustee.....	35 30
21.....	George M. Edgar, expense account.....	26 00
21.....	George M. Edgar, for clerk.....	5 00
21.....	H. K. Wade, express.....	70
21.....	Kellogg & Co., bill.....	6 08
23.....	R. H. Willis, library.....	66 50
24.....	G. D. Purinton, chemical account.....	51 36
25.....	Lee Treadwell.....	11 44
25.....	Lee Treadwell.....	28 50
28.....	A. B. Lewis.....	8 36
28.....	E. L. Fisher, bill.....	4 12
29.....	Annie Pettigrew.....	30 00
30.....	N. Cato, repairs.....	3 50
31.....	George M. Edgar, salary.....	250 00
31.....	R. H. Willis, salary.....	150 00
31.....	H. Edwards, salary.....	150 00
31.....	E. H. Murfee, salary.....	150 00
31.....	J. M. Whitham, salary.....	50 00
31.....	George D. Purinton, salary.....	50 00
31.....	J. F. Howell, salary.....	150 00
31.....	A. F. Lewis, salary.....	80 00
31.....	G. W. Macon, salary.....	80 00
31.....	J. B. Greene, salary.....	80 00
31.....	E. C. Weimer, salary.....	40 00
31.....	Rose Moss, salary.....	80 00
31.....	L. M. Hall, salary.....	40 00
31.....	W. E. Anderson, salary.....	80 00
31.....	G. W. Baldrige, janitor.....	74 00
31.....	G. W. Baldrige, labor.....	4 23
1887.		
Jan. 1.....	Curry & Harrison, bill.....	1 50
1.....	J. D. Van Winkle, bill.....	4 55
1.....	B. H. Stone & Co., bill.....	3 00
1.....	Willard French, labor.....	30 00
1.....	G. D. Purinton, salary.....	50 00
1.....	Lee Treadwell.....	14 25
1.....	J. E. Oliver telephone.....	6 00
3.....	W. H. Whitlow, bill.....	2 05
3.....	N. J. Tillman, bill.....	32 72
3.....	W. K. Wade, bill.....	2 80
4.....	J. A. McCormick, bill.....	56 75
4.....	J. F. Howell, salary.....	50 00
5.....	J. L. Lippard.....	14 32
5.....	E. C. Weimer, salary.....	40 00
5.....	E. L. Fisher, freight bill.....	1 70
5.....	H. Murfee.....	3 00
5.....	John Edgar.....	1 50
5.....	Mulholland & White, bill.....	152 19
5.....	Lee Treadwell.....	5 25
5.....	Mulholland & Lake.....	1 30
5.....	A. Volmer.....	1 59
7.....	I. M. Patridge.....	12 00
8.....	H. Edwards, salary.....	50 00
8.....	J. M. Whitham, salary.....	100 00
11.....	H. K. Wade, express.....	33 75
12.....	B. L. Mills.....	4 15
14.....	R. W. Irwin.....	3 75
15.....	G. D. Purinton, chemical account.....	23 75
15.....	G. D. Purinton, salary.....	20 00
15.....	S. H. Blackmer, bill.....	156 25
15.....	S. H. Blackmer, bill.....	11 00
15.....	Lee Treadwell.....	26 00
15.....	Charley McIlroy.....	4 50
17.....	Alf Kennedy.....	27 39
17.....	A. B. Lewis.....	23 25
17.....	H. Murfee.....	3 00
18.....	A. W. Shreve.....	8 00
21.....	E. Z. Davies.....	2 75
22.....	Lee Treadwell.....	14 25
22.....	North & Pollard.....	1 50
22.....	H. Murfee.....	1 50

CURRENT EXPENSE ACCOUNT.—Continued.

1887.			
Jan. 26.	By amount	Henry Sweitzer, bill	\$ 2 25
27.		H. K. Wade, bill	4 00
27.		C. L. Jackson & Co., bill	20 15
28.		French & Cook, repairs	1 00
29.		George M. Edgar, salary	250 00
29.		Lee Treadwell	14 25
31.		A. W. Thorpe	21 35
31.		G. W. Baldrige, janitor	78 03
31.		H. Murfee	1 50
Feb. 1.		Wilson & Dickson	3 60
1.		Gregg & Smith	2 30
1.		Gregg & Smith	1 40
1.		G. S. Albright	10 57
1.		H. Edwards, salary	100 00
1.		R. H. Willis, salary	150 00
1.		E. H. Murfree, salary	150 00
1.		J. M. Whitham, salary	50 00
1.		George D. Purinton, salary	80 00
1.		J. F. Howell, salary	100 00
1.		A. F. Lewis, salary	80 00
1.		G. W. Macon, salary	80 00
1.		J. B. Greene, salary	80 00
1.		E. C. Weimer, salary	40 00
1.		R. Moss, salary	80 00
1.		L. M. Hall, salary	80 00
1.		W. E. Anderson, salary	80 00
2.		Willard French, labor	30 00
2.		J. C. Williams & Co., bill	1 15
3.		C. Dale, bill	21 00
3.		C. Dale, bill	4 00
3.		Pat Tye, labor	1 00
5.		H. K. Wade, express	1 00
5.		William McBride, clerk	40 00
5.		A. Volmer, bill	
5.		W. R. Bates, library	2 00
5.		Lee Treadwell	21 45
5.		J. G. Neumeyer	5 07
5.		Mulholland & Lake, bill	175 35
7.		H. Murfee	1 50
7.		A. W. Shreve	9 35
7.		R. W. Irwin	2 87
7.		J. A. McCormick, bill	32 55
7.		A. B. Lewis, bill	28 45
7.		H. K. Wade	1 25
9.		R. H. Willis, library	113 50
10.		C. D. McIlroy	6 15
10.		H. Edwards, salary	6 15
12.		H. K. Wade, bill	11 00
12.		Lee Treadwell	14 25
14.		H. Murfee	1 50
15.		J. F. Howell, salary	75 00
15.		J. L. Cravens, for Shinn	10 08
21.		H. Murfee	1 50
22.		Mulholland & Lake	14 25
22.		W. P. McNair, telegram	1 00
22.		H. K. Wade, bill	3 15
23.		G. M. Edgar, salary	150 00
24.		J. D. Wingfield	4 88
26.		Lee Treadwell	15 65
28.		G. W. Baldrige, janitor	78 35
March 1.		B. H. Stone & Co, bill	3 00
1.		G. S. Albright, bill	1 90
2.		G. W. Baldrige, labor	5 94
2.		George M. Edgar, salary	100 00
2.		R. H. Willis, salary	150 00
2.		H. Edwards, salary	100 00
2.		E. H. Murfee, salary	150 00
2.		J. M. Whitham, salary	150 00
2.		George D. Purinton, salary	150 00
2.		A. F. Lewis, salary	80 00
2.		J. F. Howell, salary	75 00
2.		George W. Macon, salary	80 00
2.		J. B. Greene, salary	80 00
2.		E. C. Weimer, salary	80 00
2.		R. Moss, salary	80 00

CURRENT EXPENSE ACCOUNT.—*Continued.*

1887.			
March 2	By amount	L. M. Hall, salary	\$120 00
2		W. E. Anderson, salary	80 00
2		Willard French, labor	30 00
2		G. D. Purinton, chemical account	10 00
2		G. D. Purinton, chemical account	40 00
2		W. C. Cardwell, bill	13 86
4		J. L. Cravens, for Shinn	10 08
5		Wilson & Dickson	10 00
5		John Yerian	1 76
5		Lee Treadwell	12 55
5		A. W. Shreve	10 50
5		A. B. Lewis	26 30
7		Mulholland & Lake	135 56
7		R. W. Irwin	3 50
7		H. Murfee	3 00
9		J. L. Cravens, salary	375 00
10		J. A. McCormick, bill	45 35
12		A. M. Woodruff, bill	65 35
12		J. M. Whitham, salary	65 00
12		William McBride, clerk	40 00
12		R. H. Willis salary	100 00
12		Lee Treadwell	13 00
14		H. Murfee	1 50
17		J. F. Howell, library	1 75
17		G. M. Edgar, salary	100 00
17		R. H. Willis	60
17		W. E. Anderson, salary	15 00
20		Lee Treadwell	20 25
20		C. R. Ousley	27 40
20		D. M. Sweetzer	2 31
20		R. H. Willis, salary	50 00
20		Charles McIlroy	5 60
20		E. H. Murfee, salary	300 00
20		J. P. French, janitor	26 00
20		J. M. Whitham, physics account	28 00
20		George D. Purinton, library account	10 80
28		H. Murfee	3 00
29		A. B. Closson	86 71
29		J. C. McClellan	12 00
29		Reed & Ferguson	6 80
31		Lee Treadwell	14 00
April 1		W. P. McNair, bill	8 65
1		J. D. Van Winkle, bill	5 80
1		W. H. Whitlow, bill	6 40
1		J. E. Oliver, telephone	6 00
1		G. W. Baldrige, janitor	38 26
1		George M. Edgar, salary	150 00
1		H. Edwards, library	3 20
1		H. Edwards, salary	150 00
1		Willard French, labor	30 00
2		J. M. Whitham, salary	95 00
2		Lee Treadwell, salary	17 25
4		E. L. Fisher, bill	2 40
4		E. L. Fisher, bill	1 50
4		George D. Purinton, salary	150 00
4		J. F. Howell, salary	150 00
4		A. F. Lewis, salary	80 00
4		George W. Macon, salary	80 00
4		J. B. Greeue, salary	80 00
4		R. Moss, salary	80 00
4		E. C. Weimer, salary	120 00
4		L. M. Hall, salary	40 00
4		W. E. Anderson, salary	65 00
4		K. V. King, salary	125 00
4		J. L. Cravens, postage	103 55
5		William McBride, clerk	40 00
5		John Harmon, labor	5 66
5		W. C. Cardwell, bill	7 65
5		R. H. Willis, library	35 20
6		E. B. Harrison, bill	5 55
6		E. B. Harrison, bill	7 20
6		Reed & Ferguson, bill	2 40
6		G. W. Baldrige, labor	1 25
7		E. B. Harrison, bill	11 10
7		E. B. Harrison, bill	19 95

CURRENT EXPENSE ACCOUNT.—*Continued.*

1887.			
April	8	By amount	Mulholland & Lake, bill..... \$ 195 73
..	8		Curry & Harrison, bill..... 1 50
..	8		J. A. McCormick..... 41 99
..	9		E. B. Harrison, bill..... 3 20
..	9		H. Edwards, salary..... 50 00
..	11		A. Webb, library..... 2 00
..	12		A. W. Shreve..... 16 35
..	12		E. B. Harrison, bill..... 8 35
..	12		U. Cato & Co., pump..... 14 00
..	12		A. B. Lewis, bill..... 23 45
..	13		A. Volner..... 1 70
..	14		D. F. Wilson..... 4 97
..	14		W. F. Fike..... 11 77
..	14		W. R. Quinny..... 1 77
..	15		G. M. Edgar, expense account..... 30 00
..	15		J. M. Whitham, physics..... 17 64
..	19		J. W. Keesee, trustee..... 30 90
..	19		C. M. Taylor, trustee..... 25 30
..	19		J. P. Eagle, trustee..... 13 00
..	19		W. B. Welch, trustee..... 51 45
..	22		John Harman, labor..... 14 00
..	23		George M. Edgar, salary..... 150 00
..	23		Lee Treadwell..... 15 60
..	23		Lee Treadwell..... 27 00
..	25		H. Murfee..... 6 00
..	26		J. W. Everett..... 2 16
..	26		C. O. Adams..... 1 80
..	26		J. L. Cravens, expense account..... 33 95
..	30		H. K. Wade, express..... 1 45
..	30		H. Edwards, salary..... 150 00
..	30		Willard Frend, labor..... 80 00
..	30		George M. Edgar, salary..... 100 00
..	30		R. H. Willis, salary..... 150 00
..	30		J. M. Whitham, salary..... 150 00
..	30		George D. Purinton, salary..... 150 00
..	30		J. F. Howell, salary..... 150 00
..	30		A. F. Lewis, salary..... 80 00
..	30		George W. Macon, salary..... 80 00
..	30		J. B. Greene, salary..... 80 00
..	30		Rose Moss, salary..... 80 00
..	30		E. C. Weimer, salary..... 40 00
..	30		L. Hall, salary..... 80 00
..	30		W. E. Anderson, salary..... 80 00
..	30		G. W. Baldrige, janitor..... 48 29
..	30		J. M. Whitham..... 14 23
..	30		W. E. Dickson, library..... 20 00
..	30		Lee Treadwell..... 13 00
May	2		A. B. Kell, bill..... 4 50
..	2		H. Murfee..... 1 50
..	2		C. E. Harkrider, library..... 2 00
..	2		J. T. Warren, library..... 2 00
..	3		W. E. Whitford, labor..... 4 75
..	5		E. L. Fisher, freight bill..... 12 20
..	5		George M. Edgar, bill..... 2 10
..	7		D. M. Harbison, bill..... 16 44
..	7		Lee Treadwell, bill..... 13 00
..	7		Mulholland & Lake, bill..... 180 07
..	7		C. Dale, bill..... 9 40
..	7		C. Dale, bill..... 5 50
..	7		A. W. Shreve, bill..... 15 89
..	7		R. H. Willis, library..... 20 00
..	7		W. A. Falconer, library..... 2 00
..	7		George M. Edgar..... 1 85
..	14		J. E. Watson, janitor..... 2 50
..	14		J. E. Watson..... 4 86
..	14		J. E. Watson, library..... 2 00
..	14		R. H. Willis, library..... 24 72
..	14		Lee Treadwell..... 12 00
..	14		Wm. McBride..... 40 00
..	16		H. Edwards, salary..... 50 00
..	16		George D. Purinton, salary..... 300 00
..	17		J. A. McCormick..... 16 95
..	19		A. B. Lewis..... 8 50
..	19		J. F. Wells..... 5 96
..	19		Wm. McBride, clerk..... 14 00

CURRENT EXPENSE ACCOUNT.—*Continued.*

1887.			
May 20.....	By amount	Effie Ostrander, library.....	\$ 2 00
21.....		J. E. Malone.....	1 57
21.....		J. H. Hobbs, library.....	2 00
21.....		J. R. Ganoway, library.....	2 00
21.....		Lee Treadwell.....	11 30
23.....		W. E. Anderson, salary.....	160 00
23.....		George M. Edgar, salary.....	250 00
23.....		R. H. Willis, salary.....	300 00
23.....		H. Edwards, salary.....	200 00
23.....		E. H. Murfee, salary.....	300 00
23.....		J. M. Whitham, salary.....	290 00
23.....		J. F. Howell, salary.....	300 00
23.....		A. F. Lewis, salary.....	160 00
23.....		George W. Macon, salary.....	160 00
23.....		J. B. Greene, salary.....	160 00
23.....		E. C. Weimer, salary.....	160 00
23.....		Rose Moss, salary.....	160 00
23.....		L. M. Hall, salary.....	160 00
23.....		J. L. Cravens, postage.....	5 00
23.....		W. N. Crozier, library.....	2 00
23.....		J. L. Cravens, box rent.....	3 00
24.....		C. Dale, bill.....	3 31
25.....		W. French, labor.....	30 00
25.....		J. N. Wheeler, library.....	2 00
25.....		E. B. Harison, bill.....	1 35
25.....		W. M. Flynn, library.....	2 00
25.....		W. H. Whitlow, bill.....	4 40
25.....		George D. Purinton, chemical account.....	26 63
25.....		J. C. Brookshire, labor.....	7 25
25.....		G. W. Baldridge, janitor.....	65 30
27.....		R. H. Willis, library.....	40 00
28.....		J. M. Wade, library.....	1 50
28.....		E. H. Murfee.....	76 71
28.....		Gertrude Edgar.....	15 00
30.....		W. E. Whitford.....	3 50
		Total.....	\$ 28,838 81

REPAIRS ACCOUNT.

To amount of estimate.....	\$ 250 00	
To amount of sundries.....	19 00	
By amount expended.....		\$ 354 36
By amount balance unexpended.....		14 64
Total.....	\$ 269 00	\$ 269 00

INSURANCE ACCOUNT.

To amount balance on hand last report.....	\$ 135 76
No expenditures.....	

LIBRARY ACCOUNT.

To amount of estimate.....	\$ 500 00	
By amount expended.....		\$ 463 92
By amount unexpended.....		36 08
Total.....	\$ 500 00	\$ 500 00

REGENT AND SECRETARY.

To amount appropriation	\$ 500 00	
By amount expended.....		\$ 500 00
Total.....	\$ 500 00	\$ 500 00

CHEMICAL ACCOUNT.

To amount of estimate.....	\$ 300 00	
By amount expended.....		\$ 300 00
Total	\$ 300 00	\$ 300 00

POSTAGE ACCOUNT.

To amount estimate.....	\$ 100 00	
To amount overdrawn.....	10 55	
By amount expended.....		\$ 110 55
Total.....	\$ 110 55	\$ 110 55

FURNITURE ACCOUNT.

To amount estimate.....	\$ 150 00	
By amount expended.....		\$ 51 81
By amount to balance.....		98 19
Total.....	\$ 150 00	\$ 150 00

TRUSTEES ACCOUNT.

To amount of estimate.....	\$ 1000 00	
By amount expended.....		\$ 816 35
By amount to balanc.....		183 65
Total.....	\$ 1000 00	\$ 1000 00

DRAINAGE ACCOUNT.

To amount on hand last report.....	7 97	
No expenditures.....		

TUITION ACCOUNT.

To amount received of students	\$ 1741 10	
By amount paid to Treasurer		\$ 1741 10
Total		

STEWARD'S HALL ACCOUNT.

To amount of estimate	\$ 50 00	
By amount expended		\$ 57 98
To amount overdrawn	7 98	
Total	\$ 57 98	\$ 57 98

HEATING ACCOUNT.

To amount balance on hand last report	\$ 49 81	
By amount expended		\$ 49 81
Total	\$ 49 81	\$ 49 81

PHYSICS ACCOUNT.

To amount of estimate	\$ 300 00	
To amount of sundries	2 50	
By amount expended		\$ 314 34
To amount overdrawn	11 84	
Total	\$ 314 34	\$ 314 34

MISCELLANEOUS ACCOUNT.

To amount of estimate	\$ 600 00	
To amount of sundries	65 50	
By amount expended		\$ 730 53
To amount overdrawn	65 03	
Total	\$ 730 53	\$ 730 53

NORMAL ACCOUNT.

To amount of estimate	\$ 100 00	
By amount expended		\$ 100 00
Total	\$ 100 00	\$ 100 00

CLERK FOR PRESIDENT.

To amount estimate.....	\$ 300 00	
By amount expended		\$ 300 00
Total	\$ 300 00	\$ 300 00

CANVASS APPROPRIATION.

To amount estimate.....	\$ 256 00	
To amount of Col. Edgar	3 40	
By amount expended.....		\$ 280 25
To amount overdrawn.....	26 85	
Total	\$ 280 25	\$ 280 25

FUEL ACCOUNT.

To amount of estimate.....	\$ 1000 00	
By amount expended.....		\$ 984 35
By amount balance unexpended.....		65 65
Total	\$ 1000 00	\$ 1000 00

JANITOR'S ACCOUNT.

To amount of estimate.....	\$ 750 00	
By amount expended.....		\$ 629 56
By amount unexpended		20 44
Total	\$ 750 00	\$ 750 00

MANUAL TRAINING ACCOUNT.

To amount of estimate.....	\$ 1000 00	
By amount expended.....		\$ 1009 15
To amount overdrawn.....	9 15	
Total	\$ 1009 15	\$ 1009 15

BOARDING HOUSE ACCOUNT.

To amount received of students.....	\$ 2838 85	
By amount expended.....		\$ 2852 60
By amount overdrawn.....	14 25	
Total	\$ 2852 60	\$ 2852 60

STATIONERY AND PRINTING.

To amount of estimate.....	\$ 500 00	
By amount expended.....		\$ 528 31
To amount to balance overdraw	28 31	
Total	\$ 528 31	\$ 528 31

SALARY ACCOUNT.

To amount of estimate	\$ 17,800 00	
By amount expended.....		\$ 17,800 00
Total	\$ 17,800 00	\$ 17,800 00

FARM ACCOUNT.

To amount estimate.....	\$ 250 00	
To amount sundries.....	10 55	
By amount expended.....		\$ 259 84
By amount balance		71
Total	\$ 260 55	\$ 260 55

LADIES' ART DEPARTMENT.

To amount of estimate.....	\$ 350 00	
To amount Col. Edgar.....	16 38	
By amount expended.....		\$ 346 25
By amount balance unexpended.....		20 13
Total	\$ 366 38	\$ 366 38

LIBRARY DEPOSIT ACCOUNT.

To amount Balance on hand last report	\$ 14 10	
To amount of sundry students.....	54 00	
By amount refunded		\$ 45 95
By amount balance on hand.....		22 15
Total	\$ 68 10	\$ 68 10

ROOF ACCOUNT.

To amount on hand last report.....	\$ 342 60	
No expeditures.....		

CURRENT EXPENSE ACCOUNT.

1887.		
June.....	To amount balance on hand.....	\$ 1,882 81
June 14.....	Of Miss Hall.....	6 60
.. 20.....	State Treasurer, agricultural department.....	5,000 00
.. 20.....	State Treasurer, mechanical department.....	4,000 00
.. 20.....	State Treasurer, current expense account.....	1,000 00
July 14.....	Washington County Treasurer.....	520 00
.. 14.....	Fayetteville Treasurer.....	7 00
.. 14.....	A. W. Thorpe, old tin.....	2 25
August 29.....	State Treasurer, mechanical department.....	3,000 00
.. 29.....	State Treasurer, dormitory.....	4,000 00
.. 29.....	State Treasurer, current expense account.....	3,000 00
Sept. 6.....	Gress & Leigh.....	53 20
.. 6.....	Adams & Boyle.....	66 25
.. 6.....	Marshall & Allis.....	66 50
.. 28.....	State Treasurer, dormitory.....	5,000 00
October 13.....	W. F. Bates, for wood.....	42 15
.. 22.....	State Treasurer, current expense.....	5,000 00
.. 22.....	State Treasurer, student labor account.....	2,000 00
November 28.....	Byrnes & Blackmer, engine.....	400 00
Dec. 15.....	A. E. Menke, mechanical department.....	17 70
.. 21.....	State Treasurer, dormitory account.....	8,000 00
1888.		
January 2.....	E. H. Murfee.....	28 10
.. 28.....	J. F. Howell, for wood.....	18 75
March 2.....	Cash, for old lathes.....	1 55
.. 2.....	State Treasurer, agricultural department.....	3,000 00
.. 2.....	State Treasurer, current expense account.....	7,000 00
April 2.....	United States Treasurer, experiment station.....	7,500 00
.. 20.....	United States Treasurer, experiment station.....	3,750 00
.. 20.....	Experiment station, for stock.....	1,307 95
.. 20.....	Experiment station, farm account.....	302 47
.. 20.....	A. E. Menke, for wood sold.....	338 90
.. 20.....	W. E. Anderson.....	98 50
.. 20.....	Washington County Treasurer.....	120 00
May 24.....	W. F. Bates, for wood, etc.....	15 00
June 9.....	W. F. Bates.....	15 00
.. 16.....	State Treasurer, current expenses.....	7,000 00
.. 23.....	Experiment station.....	1 00
.. 27.....	Washington County Treasurer.....	7,700 00
July 3.....	Fayetteville Treasurer.....	3,596 00
.. 10.....	Washington Treasurer.....	300 00
.. 10.....	Fayetteville Treasurer.....	68 80
.. 16.....	United States Treasurer, experiment station.....	3,750 00
August 1.....	W. F. Bates, farm account.....	25 00
.. 18.....	Experiment station, for mechanical department.....	57 30
.. 22.....	Sundry students' tuition, etc.....	1,000 00
.. 30.....	Agricultural department.....	22 25
.. 30.....	Apicultural department.....	31 75
September 15.....	Experiment station.....	23 05
October 10.....	State Treasurer, student labor.....	3,000 00
.. 15.....	United State Treasurer, experiment station.....	3,750 00
.. 15.....	A. E. Menke.....	48 00
.. 17.....	W. F. Bates, farm account.....	30 00
.. 23.....	A. E. Menke.....	26 35
.. 27.....	W. F. Bates, farm account.....	5 35
Nov. 10.....	Sundry students' tuition, etc.....	600 00
.. 23.....	W. F. Bates, farm account.....	18 00
.. 23.....	Sundry students' library account.....	32 00
.. 23.....	Sundry students' tuition.....	715 80
Total		\$ 98,361 33

CURRENT EXPENSE ACCOUNT.—*Continued.*

CONTRA.		
1887.		
June 9.....	By amount to J. M. Seaborne, library account.....	\$ 2 00
.. 9.....	John Brown, library account.....	2 00
.. 9.....	J. W. Keesee, trustee.....	83 10
.. 9.....	W. E. Whitford, farm labor.....	16 25
.. 9.....	W. W. Powell, library.....	2 00
.. 9.....	John Harmon, labor.....	32 50
.. 9.....	J. Sellers, library.....	2 00
.. 9.....	M. Martin, library.....	1 90
.. 9.....	A. W. Thorpe, bill.....	19 11
.. 10.....	W. E. Dickson, library.....	10 00
.. 10.....	W. F. Avera, trustee.....	102 30
.. 10.....	W. M. Fishback, trustee.....	40 25
.. 10.....	W. B. Welch, trustee.....	27 50
.. 10.....	James Mitchell, trustee.....	72 75
.. 10.....	S. P. Hughes, trustee.....	41 50
.. 10.....	H. M. Schaad, bill.....	50 00
.. 10.....	Lee Treadwell, library.....	2 00
.. 11.....	Josh Thompson, labor.....	3 00
.. 13.....	W. C. Cardwell, library.....	2 00
.. 13.....	J. S. Waterson, library.....	6 00
.. 13.....	H. Murfee, messenger.....	1 50
.. 13.....	H. Murfee, messenger.....	2 50
.. 13.....	S. E. Marrs, advertisement.....	3 00
.. 13.....	Brooks & Clark, printing.....	2 00
.. 14.....	W. E. Anderson, Mechanical department.....	80 00
.. 14.....	G. W. Baldrige, janitor.....	26 60
.. 14.....	Rev. Dr. Withers.....	25 60
.. 14.....	J. L. Cravens, farm account.....	24 15
.. 14.....	Gazette, advertisement.....	14 60
.. 14.....	Mitchell & Bettis, advertisement.....	8 08
.. 14.....	J. C. McClellan, bill.....	7 05
.. 14.....	A. B. Closson, bill.....	13 33
.. 14.....	J. L. Cravens, diplomas.....	9 08
.. 14.....	F. H. Murfee, repairs.....	30 25
.. 14.....	C. Dale, repairs.....	1 70
.. 14.....	John T. Edgar, messenger.....	6 00
.. 15.....	George D. Purinton, farm account.....	100 00
.. 16.....	Thomas Jennings, bill.....	35 00
.. 16.....	Thomas Jennings, bill.....	3 25
.. 18.....	J. C. McClelland, bill.....	11 80
.. 18.....	E. F. Saxon, farm account.....	4 60
.. 18.....	J. F. Jones, farm account.....	3 00
.. 20.....	A. B. Lewis, bill.....	11 75
.. 20.....	G. C. Schoff, farm account.....	1 30
.. 21.....	J. L. Cravens, paid for advertisement.....	150 80
.. 27.....	L. E. Archias, farm account.....	2 65
.. 27.....	J. P. Scott, farm account.....	90
.. 28.....	J. F. Howell, bill.....	25 15
.. 29.....	Patridge & Reagan, printing.....	15 00
.. 29.....	C. O. Hansard, farm account.....	8 30
.. 29.....	Patridge & Reagan, farm account.....	9 50
.. 29.....	C. Howerton, farm account.....	2 85
.. 30.....	S. E. Marrs, farm account.....	4 75
.. 30.....	Dug Taylor, farm account.....	3 80
.. 30.....	Wallace Kidd, farm account.....	1 00
.. 30.....	F. T. Lee, farm account.....	5 40
.. 30.....	Leon Smith, farm account.....	4 60
.. 30.....	J. Poor, farm account.....	4 00
.. 30.....	Hayden Cooper, farm account.....	2 00
.. 30.....	D. C. Leach, farm account.....	8 15
.. 30.....	Willard Scott, farm account.....	3 95
.. 30.....	Ed Smith, farm account.....	4 95
.. 30.....	J. R. Baldrige, farm account.....	4 50
July 1.....	Jacob Harmon, farm account.....	14 50
.. 1.....	Willard French, janitor.....	25 00
.. 1.....	R. S. Curry, bill.....	50
.. 1.....	R. B. Irvin, farm account.....	9 52
.. 1.....	S. E. Marrs, printing.....	15 00
.. 1.....	J. D. VanWinkle, bill.....	25
.. 1.....	Brooks & Clark, printing.....	5 25
.. 1.....	Dan Healy, farm account.....	3 90
.. 1.....	James Harmon, farm account.....	9 85

CURRENT EXPENSE ACCOUNT.—Continued.

1887.			
July	1	By amount J. E. Oliver, telephone.....	\$ 6 00
	1	Brooks & Clark, printing	15 00
	1	E. B. Harrison, bill	95
	1	W. C. Cardwell, bill.....	7 90
	1	Frank Pace, farm account.....	6 55
	1	Elzy Davies, farm account	5 70
	1	Frank Southworth, farm account.....	4 65
	1	Wm. Howerton, farm account.....	7 70
	1	Wm. Nix, farm account	6 65
	1	S. K. Smith, farm account.....	2 40
	1	Samuel Vault, farm account.....	6 75
	1	Hugh Jackson, farm account	7 15
	1	Sam Morrow, farm account	7 30
	1	Charles Leverett, farm account	16 75
	1	W. D. Harris, farm account	13 00
	1	H. Hoge, farm account	6 20
	2	H. Edwards, library.....	30 00
	2	Florence Fisher, bill.....	32 40
	4	B. Benbrook, farm account	11 70
	4	John Harmon, farm account.....	14 65
	4	W. R. Bates, farm account.....	11 50
	5	W. French, mechanical department	7 00
	5	J. L. Cravens, salary	125 00
	5	E. H. Murfee, library	30 00
	5	A. Morris, farm account.....	1 40
	5	I. G. Jones, farm account	3 45
	6	E. B. Harrison, farm account	37 90
	6	W. H. Walkup, farm account	4 05
	7	J. F. Howell, bill	71 00
	9	Mulholland & Lake, bill.....	80
	9	W. E. Anderson mechanical department.....	20 00
	9	H. K. Wade, library.....	1 60
	12	J. W. Self, farm account	95
	12	C. M. Bigelow, farm account	2 45
	13	D. Boone, farm account	7 52
	13	Joe Poor, farm account	27
	13	Mitchell & Betis, printing.....	8 08
	14	A. Hodges, farm	85
	14	George Quick farm.....	4 25
	14	Preston Ellis, farm	4 90
	14	James Taylor, farm	4 00
	14	H. Hoge, farm	6 10
	14	J. L. Collins, farm	6 35
	14	F. R. Morrow, farm	4 65
	14	L. Patrick, farm	85
	14	J. Harmon, farm	4 65
	14	M. D. Nelson, farm.....	2 55
	14	Wm. Ratliff, farm.....	1 70
	14	E. McKendree, farm	2 10
	14	H. Cooper, farm.....	4 50
	14	James Eslick, farm	2 55
	14	C. Benbrook, farm	7 85
	14	A. Chapman, farm.....	1 70
	14	H. Mehan, farm.....	1 55
	14	Charles Purdy, farm.....	1 55
	15	Willard Scott, farm	3 00
	15	W. R. Bates, farm.....	4 67
	18	George D. Purinton, farm.....	93 00
	18	E. L. Fisher, freight bill.....	2 41
	18	E. L. Fisher, farm account.....	3 82
	18	Tim Smith, farm account.....	3 65
	18	J. R. Baldridge, farm account.....	8 30
	18	W. P. McNair, bill	8 80
	19	George D. Purinton	12 15
	19	Gazette Printing Co., bill	5 33
	19	E. L. Fisher.....	40
	20	Will Nix, farm account	8 10
	21	Ed Smith, farm account.....	6 25
	21	W. E. Anderson, mechanical department.....	185 00
	21	W. L. Call, farm.....	1 80
	22	E. L. Fisher, freight bill.....	5 33
	23	H. J. Hall, farm account.....	8 65
	25	W. R. Bates, mechanical department.....	11 60
	25	A. G. Taff, farm account.....	36 30

CURRENT EXPENSE ACCOUNT—Continued.

1887			
July	25	By amount Jesse Walker, farm account.....	\$ 9 18
..	26	J. L. Knesal, farm account.....	1 00
..	25	R. C. Harris, farm account.....	2 15
..	25	W. Murrell, farm account.....	13 18
..	26	Wm. Howarton, farm account.....	12 95
..	26	Jacob Harmon, farm account.....	30 78
..	26	Frank Pace, farm account.....	10 55
..	26	H. Jackson, farm account.....	11 90
..	26	Thomas McCormick, farm account.....	8 75
..	26	H. K. Wade, expenses.....	3 00
..	26	Charles Leverett, farm.....	9 45
..	26	Frank Southworth, farm.....	7 35
..	26	Charles McLroy, farm.....	5 05
..	26	John Collins, farm.....	4 60
..	26	George D. Purinton, farm.....	2 75
..	26	Stover Leverett, farm.....	17 31
..	26	A. L. Gregg, farm.....	3 40
..	27	Whit Taylor, farm.....	5 60
..	27	Wm. Burrough, farm.....	1 75
..	27	Charles Morgan, farm.....	1 90
..	27	Sam Morrow, farm.....	12 95
..	27	W. E. Anderson, mechanical department.....	62 95
..	27	W. E. Anderson, mechanical department.....	80 75
..	27	George Riley, farm.....	6 90
..	27	P. Thomas, farm account.....	2 25
..	27	J. L. Jilks, farm account.....	3 50
..	28	E. McKendon, farm account.....	3 10
..	28	Patridge & Reagan, printing.....	1 00
..	28	J. B. Harrison, mechanical department.....	2 00
..	28	Samuel Vault, farm.....	10 65
..	28	E. H. Murfee, salary.....	80 00
..	28	C. Dale, bill mechanical department.....	169 12
..	29	Cato Brothers, repairs.....	1 50
..	29	W. E. Anderson, mechanical department.....	38 85
..	29	W. Murrell, farm account.....	2 55
..	30	J. Ward, farm account.....	10 85
..	30	James Taylor, farm account.....	5 00
..	30	Troy Pettis, labor.....	4 00
..	30	C. McKinney, labor.....	4 00
..	30	J. McKendree, farm.....	4 25
..	30	McLroy & Co., draft.....	20 45
..	30	James Elsie, farm.....	4 25
Aug.	6	W. French, engineer.....	50 00
..	6	McLroy & Co., farm account.....	10 30
..	6	Cazort Bros., mechanical department.....	257 33
..	6	E. H. Murfee, salary.....	30 00
..	6	E. L. Fisher, freight bill.....	91 82
..	6	J. B. French, janitor.....	6 00
..	6	J. Dalton, mechanical department.....	4 50
..	6	W. B. Welch, trustee.....	39 10
..	6	E. B. Harrison, bill.....	50 87
..	6	W. E. Anderson, mechanical department.....	528 10
..	6	C. Boles, mechanical department.....	2 50
..	6	W. E. Anderson, mechanical department.....	15 00
..	6	W. M. Fishback, trustee.....	14 60
..	6	J. W. Keesee, trustee.....	29 95
..	6	W. F. Avera, trustee.....	15 35
..	6	Charles Young, farm.....	1 40
..	6	E. J. Hall, farm account.....	15 00
..	6	James Wallace, labor.....	6 00
..	6	Eli Armstrong, labor.....	4 00
..	8	J. W. Mayo, mechanical department.....	30 00
..	8	W. E. Anderson, mechanical department.....	538 20
..	8	W. E. Anderson, mechanical department.....	180 00
..	8	E. H. Murfee, expense account.....	100 00
..	8	Wilson & Dickson, bill.....	4 75
..	8	Richard Irvin, farm account.....	13 20
..	8	John McClellan, bill.....	12 50
..	8	H. K. Wade, express.....	1 00
..	9	Wm. Mayes, mechanical department.....	6 65
..	9	A. G. Taff, mechanical department.....	16 00
..	9	W. E. Anderson, mechanical department.....	1 75
..	10	Eli Armstrong, mechanical department.....	6 25
..	10	J. L. Cravens, expense account.....	23 55
..	10	Wm. Mayes, mechanical department.....	57 04

CURRENT EXPENSE ACCOUNT—*Continued.*

1887			
Aug. 11.....	By amount	S. E. Marrs, printing.....	\$ 10 00.
12.....		J. L. Cravens, postage.....	70 38
13.....		J. B. French, janitor.....	2 50
13.....		E. J. Hall, farm account.....	16 00
13.....		Charles Dott, medical department.....	16 50
13.....		W. A. Walkup, medical department.....	5 65
13.....		Preston Bowles, medical department.....	9 00
13.....		W. R. Bates, medical department.....	11 00
13.....		Lu Treadwell, medical department.....	28 25
13.....		W. E. Anderson, medical department.....	9 82
16.....		J. L. Bozarth, bill.....	9 00
16.....		Wm. Mayes, mechanical department.....	50 24
16.....		M. Coffey, mechanical department.....	14 00
18.....		E. B. Harrison, farm.....	16 55
18.....		W. F. Bates, farm.....	300 60
18.....		George S. Albright, mechanical department.....	50
19.....		A. E. Menke, farm account.....	19 71
20.....		P. Gholson, farm account.....	220 00
20.....		H. J. Hall, library.....	7 75
20.....		W. F. Bates, farm account.....	2 50
20.....		P. H. Babb, mechanical department.....	25 00
20.....		S. L. Irvin, mechanical department.....	44 00
20.....		W. E. Anderson, mechanical department.....	25 00
20.....		F. J. Hall, farm.....	10 00
23.....		S. E. Marrs, farm.....	5 00
24.....		E. L. Fisher, freight bill.....	67 94
25.....		W. E. Anderson, mechanical department.....	550 82
27.....		Preston Bowles, mechanical department.....	6 00
27.....		W. E. Anderson, mechanical department.....	251 77
27.....		A. Volner, farm.....	2 75
27.....		E. J. Hall, farm.....	5 00
27.....		E. McKinney, farm.....	1 48
27.....		S. J. Jones, farm.....	29 00
27.....		J. West, farm.....	3 17
27.....		Charles Todd, mechanical department.....	10 00
27.....		P. H. Babb, mechanical department.....	30 00
27.....		A. E. Menke, farm account.....	173 12
27.....		Patridge & Reagan, farm account.....	13 30
27.....		J. M. Whitham, library.....	60 00
27.....		J. M. Whitham, mechanical department.....	25 85
Sept. 27.....		W. Freach, janitor and engineer.....	50 00
1.....		Wilson & Dsckson, bill.....	40
1.....		W. H. Whitlow, bill.....	1 90
1.....		G. S. Albright, bill.....	59 17
1.....		W. D. Ratcliff, bill.....	4 50
2.....		John Collins, farm account.....	2 96
2.....		A. E. Menke, farm account.....	58 43
2.....		A. E. Menke, farm account.....	53 26
2.....		W. E. Anderson, mechanical department.....	60 00
2.....		J. W. Mayo, mechanical department.....	30 00
2.....		L. C. Gardner, mechanical department.....	30 00
2.....		W. E. Anderson, mechanical department.....	3 60
2.....		E. Z. Davis, mechanical department.....	7 35
3.....		C. Dale, mechanical department.....	103 50
3.....		H. Murfee, messenger.....	1 50
3.....		J. B. West, mechanical department.....	3 00
3.....		W. H. Walkup, janitor.....	2 45
3.....		Hugh Jackson.....	1 15
3.....		W. H. Walkup.....	8 25
3.....		Lu Treadwell, mechanical department.....	12 00
3.....		W. L. Illian.....	1 00
3.....		Byrnes & Blackner, bill.....	16 00
5.....		J. A. Cockman, mechanical department.....	9 00
5.....		W. E. Anderson, mechanical department.....	6 60
6.....		A. Volner, mechanical department.....	10 55
7.....		S. L. Irvin, mechanical department.....	40 00
7.....		R. B. Irvin, mechanical department.....	5 00
7.....		H. K. Wade, express.....	1 60
7.....		W. R. Bates.....	18 00
7.....		A. Volner.....	12 07
8.....		A. G. Taff.....	47 00
8.....		J. H. Van Hoose, insurance.....	264 24
8.....		F. W. Simonds, biology.....	31 70
8.....		Benbrook & Co., mechanical department.....	4 20
8.....		E. B. Wall, insurance.....	56 25

CURRENT EXPENSE ACCOUNT—Continued.

1887			
Sept.	10.....	F. W. Simonds, library.....	\$ 30 00
	10.....	Cazort Bros.....	15 38
	12.....	J. T. Reynolds, repairs.....	42 45
	13.....	J. T. Reynolds, mechanical department.....	77 79
	13.....	George Edgar.....	1 50
	13.....	A. E. Menke, farm.....	60 10
	13.....	A. E. Menke, farm.....	42 27
	13.....	A. E. Menke, library.....	60 00
	13.....	J. A. Cockman, mechanical department.....	1 00
	13.....	P. H. Babb, mechanical department.....	40 00
	14.....	J. M. Whitham, mechanical department.....	188 52
	15.....	W. E. Anderson, mechanical department.....	901 09
	15.....	W. E. Anderson, mechanical department.....	13 10
	15.....	W. E. Anderson, mechanical department.....	1 20
	15.....	J. B. Vinyard.....	10 00
	19.....	Charles Todt, mechanical department.....	51 50
	19.....	H. T. Brookshire, mechanical department.....	18 00
	21.....	E. L. Fisher, mechanical department.....	155 40
	21.....	J. B. West, mechanical department.....	1 50
	21.....	S. Leverett, mechanical department.....	7 50
	21.....	C. R. Carden, library.....	2 00
	22.....	E. McKendrix.....	2 40
	23.....	A. E. Menke, farm account.....	4 22
	23.....	A. E. Menke, farm account.....	267 21
	23.....	J. A. Cockman.....	1 00
	24.....	W. Beers.....	5 00
	26.....	W. E. Anderson, mechanical department.....	440 00
	26.....	W. E. Anderson, mechanical department.....	4 90
	26.....	Byrnes & Blackner, mechanical department.....	100 00
	26.....	George Edgar.....	3 00
	27.....	H. C. Brookshire, mechanical department.....	12 00
	27.....	Byrnes & Blackner, dormitory.....	5200 00
	28.....	Patridge & Reagan, printing.....	2 50
	29.....	W. E. Anderson.....	83 33
	30.....	B. H. Stone, bill.....	22 00
	30.....	F. H. Murfee, salary.....	495 00
	30.....	J. M. Whitham, salary.....	133 33
	30.....	A. E. Menke, salary.....	134 33
	30.....	H. Edwards.....	125 00
	30.....	F. W. Simonds, salary.....	125 00
	30.....	J. T. Howell, salary.....	100 00
	30.....	R. H. Willis, salary.....	83 33
	30.....	S. S. Twombly, salary.....	83 33
	30.....	G. W. Droke, salary.....	66 66
	30.....	A. Waggener, salary.....	66 66
	30.....	J. C. Massie, Jr., salary.....	66 66
	30.....	N. J. Williams, salary.....	66 66
	30.....	Mrs. L. Willis, salary.....	66 66
	30.....	J. W. Mays, salary.....	50 00
	30.....	L. C. Gardener, salary.....	33 33
	30.....	W. F. Bates, salary.....	83 33
	30.....	K. V. King, salary.....	16 66
	30.....	Lee Treadwell, salary.....	16 66
	30.....	P. H. Babb, mechanical department.....	59 50
	30.....	W. French, janitor.....	63 00
	30.....	W. C. Cardwell, bill.....	25 35
Oct.	1.....	G. W. Baringer, mechanical department.....	52 50
	1.....	O. B. Warren, mechanical department.....	1 00
	1.....	Gregg & Smith, repairs.....	18 15
	1.....	Wilson & Dickson, bill.....	1 75
	1.....	T. W. White & Co., farm account.....	60 00
	1.....	S. L. Irvin, mechanical department.....	30 00
	1.....	A. E. Menke, farm account.....	228 15
	1.....	W. R. Bates, mechanical department.....	1 50
	1.....	E. L. Fisher, farm account.....	119 26
	3.....	Washington County Bank, farm account.....	422 50
	3.....	George Edgar.....	1 50
	3.....	A. E. Menke, farm account.....	278 88
	4.....	F. W. Simonds, biology account.....	11 50
	5.....	Ed Quarles, telephone.....	6 00
	5.....	J. B. West, mechanical department.....	1 45
	7.....	Coffee & Irvin, mechanical department.....	2 15
	7.....	E. L. Fisher, freight bill.....	98 02
	7.....	E. B. Harrison, bill.....	3 60
	7.....	E. B. Harrison, bill.....	1 55

CURRENT EXPENSE ACCOUNT.—*Continued.*

1887.			
Oct. 7	By amount	Benbrook & Co., mechanical department	\$ 4 25
7		J. M. Courtney, mechanical department	2 50
7		C. Dale, mechanical department	134 97
10		George Edgar	1 50
11		W. H. Walkup, library	2 00
11		E. B. Harrison, mechanical department	287 75
13		Charles Todd	11 15
13		Washington County Bank	42 90
15		A. Volner	50 29
17		McIlroy & Co., printing bill	9 15
18		A. E. Menke, farm account	322 67
18		A. E. Menke, student labor	25 19
19		Beulah Hight	1 65
22		R. H. Wilks, library	30 00
24		S. L. Irwin, mechanical department	39 00
24		Byrnes & Blackmer, farm account	400 00
26		W. Duggin, farm account	146 07
28		J. R. Taylor, mechanical department	10 80
29		J. L. Turner, student labor	1 30
29		J. C. Benbrook, student labor	1 70
29		J. H. McNeely, student labor	80
29		W. R. Hervey, student labor	1 60
29		S. K. Smith, student labor	1 80
29		W. R. Bates, student labor	1 80
29		W. L. Smith, student labor	1 09
29		J. F. Bell, student labor	1 20
29		J. E. Malone, student labor	1 09
29		H. Speer, student labor	1 20
29		B. B. Woodard, student labor	80
29		F. H. Fannin, student labor	1 00
26		H. L. Willoughby, student labor	67
29		J. H. Hobbs, student labor	95
29		C. C. Patton, student labor	1 70
29		D. C. Aiken, student labor	1 90
29		E. D. Davis, student labor	1 00
29		Samuel Vaulx, student labor	90
29		W. L. Blackwell, student labor	1 30
29		W. L. Illian, student labor	1 30
29		A. C. Wood, student labor	92
29		C. F. Bush, student labor	45
29		Henry Pace, student labor	1 24
29		R. D. Harris, student labor	1 80
29		W. W. Haney, student labor	1 70
29		W. W. Haney (for Dent), student labor	60
29		H. Jackson, student labor	80
29		J. A. Russell, student labor	30
29		G. W. Hayes, student labor	90
29		A. J. Newman, student labor	1 58
29		J. Redus, student labor	2 12
29		S. Y. Morrow, student labor	1 41
29		W. J. Patton, student labor	1 38
29		T. V. Bruce, student labor	1 40
29		C. R. Carden, student labor	1 00
29		H. W. Shreve, student labor	1 20
29		L. A. Roach, student labor	2 40
29		C. J. Young, student labor	1 30
29		F. Lee, student labor	1 30
29		D. W. Moore, student labor	1 60
29		J. Payne, student labor	1 09
29		H. B. Shreve, student labor	2 52
29		G. A. Humphreys, student labor	2 40
29		W. French, janitor	86 00
29		C. Shelby, student labor	70
29		R. O. Canfield, student labor	90
29		G. V. Skelton, student labor	2 80
29		W. C. Blanks, student labor	1 40
29		W. H. Burton, student labor	90
29		Fred Greene, student labor	2 10
29		W. Oliver, student labor	2 02
29		E. C. Hoag, student labor	1 50
29		J. D. Perry, student labor	20
29		E. P. McKibben, student labor	1 30
29		R. W. Dowell, student labor	30
29		M. C. Wade, student labor	90
29		P. Bowles, student labor	1 52

CURRENT EXPENSE ACCOUNT.—Continued.

1887.			
Oct.	29	By amount	A. W. Evans, student labor..... \$ 93
	29		J. B. West, student labor..... 1 20
	29		R. C. Harris, student labor..... 80
	29		R. Harville, student labor..... 1 60
	29		R. Vaughan, student labor..... 92
	29		M. L. Hulse, student labor..... 70
	29		C. D. McIlroy, student labor..... 80
	29		J. W. Simmons, student labor..... 1 09
	29		W. S. Horton, student labor..... 1 70
	29		C. R. Carden, student labor..... 2 80
	29		J. J. Peudergrass, student labor..... 3 45
	29		H. L. Gregg, student labor..... 1 69
	29		G. W. Johnson, student labor..... 50
	29		G. W. Johnson, student labor..... 70
	29		W. P. Funston, student labor..... 1 00
	29		J. A. Cockman, student labor..... 50
	29		J. T. Humphreys, student labor..... 1 80
	29		L. F. Fishback, student labor..... 60
	29		W. F. Drake, student labor..... 5 33
	29		Ben Johnson, mechanical department..... 18 00
	29		C. Nauck, student labor..... 1 30
	29		P. Galloway, student labor..... 50
	29		W. E. Anderson, mechanical department..... 41 88
	29		Mrs. E. M. Willis, art department..... 11 18
	29		H. B. Shreve, student labor..... 1 00
	29		J. A. Taft, student labor..... 4 70
	29		J. M. Ware, student labor..... 1 30
	29		W. J. Hamilton, student labor..... 1 30
	29		R. H. Irwin, student labor..... 90
	29		W. H. Pittman, student labor..... 1 73
	29		R. W. Duncan, student labor..... 2 43
	29		W. Speers, student labor..... 40
	29		Robert W. Barnett, student labor..... 92
	29		J. J. Hocott, student labor..... 40
Nov.	1		J. D. Van Winkle, bill..... 1 75
	1		M. Danaher, student labor..... 1 73
	1		J. L. Jelks, student labor..... 70
	1		W. R. Funk, student labor..... 90
	1		A. E. Smith, student labor..... 80
	2		A. G. Taft, mechanical department..... 2 05
	2		C. M. Greene, student labor..... 2 67
	2		H. E. Williams, student labor..... 1 32
	2		J. C. McNeeley, student labor..... 1 65
	3		P. H. Babb, mechanical department..... 75 00
	4		S. Leverett, student labor..... 1 80
	4		S. C. West, student labor..... 60
	5		N. J. Milsap, student labor..... 1 73
	5		A. E. Menke, farm account..... 186 60
	7		N. J. Hamilton, student labor..... 1 05
	8		H. Edwards (for Purington)..... 169 17
	9		O. H. Williams, student labor..... 70
	10		E. L. Fisher, mechanical department..... 23 55
	10		W. R. Hervey, library..... 1 80
	10		C. M. Greene, student labor..... 1 50
	10		J. A. Russell, student labor..... 1 12
	11		G. S. Albright, mechanical department..... 6 14
	11		K. V. King, bill..... 14 50
	11		E. B. Harrison, bill..... 1 30
	11		Thomas Jennings, mechanical department..... 1 00
	12		B. J. Johnson, mechanical department..... 6 00
	12		B. F. Wood, student labor..... 1 00
	12		R. B. Irwin, student labor..... 1 30
	12		McIlroy & Co., student labor..... 1 50
	12		H. M. Marion, student labor..... 1 00
	17		Byrnes & Blackmer, dormitory..... 3000 00
	17		J. J. Montgomery, student labor..... 90
	19		A. E. Menke, student labor..... 10 97
	19		A. E. Menke, farm account..... 159 25
	19		Lee Treadwell, student labor..... 1 94
	19		J. F. Whitney, student labor..... 50
	22		J. T. Reynolds, medical department..... 20 70
	22		J. T. Reynolds, repairs..... 5 40
	22		J. E. Malone, student labor..... 1 50
	23		H. K. Wade..... 1 50
	23		H. V. Cassidy, student labor..... 1 22

CURRENT EXPENSE ACCOUNT.—*Continued.*

1887.			
Nov. 23.....	By amount	J. W. Voes, student labor	\$ 1 05
25.....		C. A. Harris, student labor	1 20
25.....		R. A. Vaughan, student labor	1 12
25.....		A. W. Evans, student labor	1 57
25.....		H. Jackson, student labor	1 42
25.....		M. L. Sibley, student labor	1 27
25.....		G. W. Heyes, student labor	1 50
25.....		Walter Bray, student labor	1 27
25.....		W. E. Mullins, student labor	1 20
25.....		L. M. Beers, student labor	97
25.....		D. W. Moore, student labor	1 57
25.....		O. H. Williams, student labor	90
25.....		F. P. McKibben, student labor	1 50
25.....		J. L. Jilks, student labor	1 42
25.....		W. H. Burton, student labor	1 20
25.....		Elzy Davies, student labor	1 05
25.....		Frank Lea, student labor	1 35
25.....		J. J. Montgomery, student labor	1 05
25.....		S. Y. Morrow, student labor	1 50
25.....		R. M. Barnett, student labor	1 50
25.....		Paul Galloway, student labor	1 57
25.....		J. F. Whitney, student labor	90
25.....		John Ware, student labor	1 35
25.....		C. D. McIlroy, student labor	1 20
25.....		J. W. Simmons, student labor	1 27
25.....		J. Payne, student labor	1 12
25.....		W. P. Funston, student labor	1 57
25.....		C. R. Carden, student labor	1 42
25.....		F. H. Fannin, student labor	1 35
25.....		J. A. Heberly, student labor	1 35
25.....		W. J. Blackwell, student labor	1 50
25.....		H. L. Wiloughby, student labor	1 20
25.....		R. C. Harris, student labor	1 50
25.....		J. H. McNeeley, student labor	1 20
25.....		B. B. Woodard, student labor	1 20
25.....		Hugh Shreve, student labor	1 27
25.....		J. F. Wills, student labor	1 42
25.....		Carl Shelby, student labor	1 27
25.....		J. C. Benbrook, student labor	1 20
25.....		W. L. Smith, student labor	84
25.....		H. L. Gregg, student labor	1 57
25.....		S. K. Smith, student labor	1 35
25.....		E. C. Hoag, student labor	1 42
25.....		H. M. Marion, student labor	60
25.....		A. E. Smith, student labor	1 12
25.....		W. L. Illian, student labor	1 57
25.....		G. H. Spear, student labor	1 50
25.....		J. A. Cockman, student labor	1 42
25.....		W. S. Horton, student labor	1 42
25.....		S. C. West, student labor	1 42
25.....		W. Howell, student labor	1 60
26.....		W. Howell, messenger	0 00
26.....		R. T. Hare, student labor	1 42
26.....		J. H. Atkins, student labor	50
26.....		W. R. Funk, student labor	1 57
26.....		Charles Nauck, student labor	1 12
26.....		A. Byrne, mechanical department	86 25
28.....		Byrnes & Blackmer, farm account	400 00
28.....		Byrnes & Blackmer, farm account	200 00
28.....		W. E. Anderson, mechanical department	126 70
28.....		A. C. Wood, student labor	3 07
28.....		S. F. Vaulx, student labor	1 35
28.....		B. R. Davidson, dormitory	10 00
28.....		H. K. Wade, student labor	1 20
29.....		R. H. Willis, art department	3 80
30.....		Ida Pace, library	2 00
30.....		W. J. Blackwell, library	2 00
30.....		W. French, janitor	96 60
30.....		C. A. Nauck, library	1 60
30.....		Wilson & Dickson, bill	1 25
30.....		H. M. Schaad, bill	15 00
Dec. 2.....		C. Dale, fuel account	496 00
2.....		J. A. Taff, library	8 00
3.....		J. A. Taff, library	10 00
3.....		McIlroy & Co., student labor	106 99

CURRENT EXPENSE ACCOUNT.—Continued.

1887.		
Dec. 5.....	By amount Patridge & Reagan, printing.....	\$ 15 00
6.....	Thomas Harding, dormitory.....	200 00
7.....	A. E. Menke, student labor.....	42 34
8.....	M. C. Wade, labor.....	79
9.....	H. K. Wade, mechanical department.....	1 00
15.....	W. E. Anderson, farm.....	17 70
15.....	George Sutton, mechanical department.....	1 65
15.....	McIlroy & Co., student labor.....	8 97
16.....	J. J. Morgan, farm account.....	5 33
19.....	W. Howell.....	4 80
19.....	W. E. Anderson, mechanical department.....	11 50
20.....	John McCulloch, library.....	6 00
20.....	C. L. Jackson & Co., mechanical department.....	124 11
20.....	C. M. Prentice, dormitory.....	200 00
20.....	Byrnes & Blackmer, dormitory.....	3,000 00
24.....	F. Shebly, farm account.....	84 00
29.....	Mac Devin, farm account.....	100 00
36.....	E. H. Murfee, salary.....	495 00
30.....	J. M. Whitham, salary.....	400 00
30.....	H. Edwards, salary.....	375 00
30.....	F. W. Simonds, salary.....	375 00
30.....	J. F. Howell, salary.....	300 00
30.....	R. H. Willis, salary.....	250 00
30.....	W. E. Anderson, salary.....	250 00
30.....	S. S. Twombly, salary.....	250 00
30.....	G. W. Droke, salary.....	200 00
30.....	Annie Waggener, salary.....	200 00
30.....	N. J. Williams, salary.....	200 00
30.....	J. C. Massie Jr., salary.....	200 00
30.....	L. M. Willis, salary.....	200 00
30.....	J. W. Mayo, salary.....	150 00
30.....	L. C. Gardner, salary.....	100 00
30.....	W. F. Bates, salary.....	150 00
30.....	Lee Treadwell, salary.....	50 00
30.....	K. V. King, salary.....	50 00
30.....	W. French, janitor.....	54 00
30.....	P. H. Babb, salary.....	150 00
30.....	J. C. Cockman, farm account.....	18 55
31.....	Will Bates, farm account.....	20 00
1888.		
January 2.....	L. Daniels, farm account.....	25 00
2.....	Gregg & Smith, bill.....	2 95
2.....	W. C. Cardwell, bill.....	3 55
2.....	E. B. Harrison, bill.....	22 55
3.....	H. K. Wade.....	45
4.....	J. L. Cravens, salary.....	250 00
5.....	Press Printing Co.....	5 58
5.....	R. T. Smith.....	5 65
6.....	Mac Devin, medical department.....	318 95
6.....	A. E. Menke, salary.....	400 00
7.....	McIlroy & Co., library.....	16 85
9.....	J. A. Cockman.....	2 55
9.....	Sweitzer Wagon Co., mechanical department.....	75
10.....	J. L. Cravens, yostage.....	35 35
21.....	W. B. Welch, trustee.....	40 50
21.....	J. B. French, janitor.....	8 00
21.....	W. M. Fishback, trustee.....	15 10
21.....	A. B. Lewis, bill.....	2 70
25.....	E. B. Harrison, bill.....	332 60
27.....	C. Dale, farm account.....	24 85
27.....	C. Dale, mechanical department.....	94 80
28.....	A. E. Menke, farm account.....	128 82
28.....	E. B. Harrison, farm account.....	70 70
28.....	W. French, janitor.....	51 00
28.....	Mac Devin, cash, farm account.....	424 80
February 2.....	A. E. Menke, farm account.....	241 92
2.....	J. B. French.....	3 50
2.....	E. B. Harrison, geology account.....	2 75
3.....	E. L. Fisher, freight bill.....	14 73
3.....	W. L. Illiam.....	2 50
6.....	R. S. Curry, bill.....	2 00
7.....	W. E. Anderson, mechanical department.....	20 05

CURRENT EXPENSE ACCOUNT.—Continued.

1888.			
February 11.....	By amount	Emmet McKendree.....	\$ 3 35
11.....		C. Dale, bill.....	22 85
11.....		S. L. Irvin, mechanical department.....	11 50
11.....		A. C. Hoag, mechanical department.....	11 50
12.....		P. H. Babb, mechanical department.....	7 65
13.....		F. W. Gibb, bill.....	10 08
13.....		E. L. Fletcher, salary.....	100 00
14.....		A. Volner, mechanical department.....	7 69
15.....		M. D. Nelson, bill.....	7 45
15.....		S. S. Twombly, farm account.....	50 00
16.....		W. A. Gleghorn.....	8 15
16.....		B. H. Stone, mechanical department.....	88 67
16.....		F. W. Simonds, biology account.....	35 90
20.....		A. E. Menke, farm account.....	200 00
20.....		A. E. Menke, farm account.....	81 73
21.....		J. W. Keesee, trustee.....	70 55
22.....		S. S. Twombly, farm account.....	41 75
24.....		G. W. Droke, repairs.....	10 00
28.....		W. French, mechanical department.....	40 00
29.....		W. W. McCart, janitor.....	30 00
29.....		W. P. McNair, mechanical department.....	4 65
29.....		Mac Devin, farm account.....	581 45
March 1.....		Benbrook & Co., repairs.....	2 70
1.....		Benbrook & Co., bill.....	2 15
1.....		J. H. Williams & Co., bill.....	1 50
1.....		W. H. Whitlow, bill.....	1 05
1.....		G. W. Droke, repairs.....	15 00
1.....		Gregg & Smith, bill.....	2 70
1.....		W. French, military department.....	12 00
1.....		W. P. McNair, farm account.....	90 68
1.....		A. E. Menke, farm account.....	26 00
1.....		Mac Devin, farm account.....	101 75
1.....		A. B. Dewis, bill.....	5 55
1.....		W. H. Whitlow, bill.....	5 75
2.....		Duggan & Co., farm account.....	144 00
3.....		W. A. Gleghorn.....	4 50
3.....		Byrnes & Blackmer, repairs.....	217 60
5.....		S. P. Hughes, trustee.....	25 00
6.....		G. W. Droke, repairs.....	100 00
7.....		W. C. Cardwell, library.....	10 00
7.....		W. E. Whitford, bill.....	9 25
7.....		W. L. Illian, mechanical department.....	7 50
7.....		W. L. Illian, bill.....	2 05
10.....		A. E. Menke, farm account.....	15 00
10.....		L. Castebreechi, bill.....	43 54
12.....		S. E. Marrs, printing.....	4 00
12.....		Duggin & Co.....	15 00
13.....		A. E. Menke, farm account.....	108 00
16.....		F. W. Simonds, biology account.....	175 53
16.....		Arkansas Advertising Agency.....	250 00
17.....		J. M. Whitham, library account.....	75 00
17.....		H. Edwards, library account.....	45 00
17.....		J. F. Howell, library account.....	45 00
17.....		A. Byrnes, bill.....	150 00
22.....		Jos. Marbut, mechanical department.....	3 75
23.....		A. E. Menke, farm account.....	133 86
23.....		J. I. Cravens, expense account.....	26 55
24.....		H. K. Wade, mechanical department.....	1 25
24.....		J. T. Reynolds, mechanical department.....	13 68
24.....		Byrnes & Blackmer, dormitory.....	5,500 00
24.....		C. M. Prentice, dormitory.....	50 10
24.....		M. Marfee, messenger.....	6 00
26.....		W. P. McNair, mechanical department.....	6 90
28.....		H. K. Wade, mechanical department.....	1 75
28.....		J. E. Harmon.....	3 00
28.....		Miss M. Taff, library account.....	10 00
28.....		C. Boles & Co., mechanical department.....	25
29.....		A. Volner, mechanical department.....	51 00
31.....		E. H. Marfee, salary.....	495 00
31.....		J. M. Whitham, salary.....	400 00
31.....		A. E. Menke, salary.....	200 00
31.....		H. Edwards, salary.....	375 00
31.....		F. W. Simonds, salary.....	375 00
31.....		J. F. Howell, salary.....	300 00

CURRENT EXPENSE ACCOUNT.—Continued.

1888			
March	31.	By amount C. H. Leverett, salary	\$ 83 33
	31.	W. E. Anderson, salary	250 00
	31.	S. S. Twombly, salary	125 00
	31.	G. W. Droke, salary	200 00
	31.	A. Waggener, salary	200 00
	31.	N. Williams, salary	200 00
	31.	J. C. Ma-sie, salary	200 00
	31.	Cora B Lyon, salary	66 66
	31.	J. W. Mayo, salary	150 00
	31.	L. C. Gardner, salary	100 00
	31.	W. F. Bates, salary	150 00
	31.	Lee Treadwell, salary	50 00
	31.	P. H. Babb, salary	150 00
	31.	K. V. King, salary	50 00
	31.	F. W. Simonds, library account	45 00
	31.	Baum & Bros, biology account	15 00
	31.	W. W. McCart, janitor	47 00
April	2.	W. C. Cardwell, bill	13 95
	2.	J. D. VanWinkle, bill	3 10
	2.	W. N. Crozier, salary	11 10
	2.	C. M. Prentice, dormitory	21 00
	3.	W. F. Bates, experiment station	158 00
	3.	A. E. Menke, experiment station	769 67
	3.	A. E. Menke, experiment station	200 00
	3.	Treasurer A. I. U., experiment station	1,307 95
	4.	Charles Clark, bill	2 00
	4.	Cazort Bros., experiment station	9 90
	4.	F. S. Richman, experiment station	75 32
	4.	R. L. Dinwiddie, experiment station	49 31
	4.	W. L. Duggan & Co., experiment station	1,000 00
	5.	Duggan & Co., experiment station	1,000 00
	5.	McIlroy & Co., experiment station	236 70
	5.	Byrnes & Blackmer, experiment station	887 40
	5.	Byrnes & Blackmer, farm account	262 60
	6.	C. M. Taylor, trustee	39 70
	6.	M. Murfee	3 00
	7.	McIlroy & Co., experiment station	63 50
	7.	A. E. Menke, farm and station labor	99 91
	7.	W. F. Bates, experiment station	45 00
	7.	S. S. Twombly, experiment station	125 00
	7.	G. Benton, experiment station	25 75
	7.	W. Ross, experiment station	17 25
	7.	C. B. Collingwood, experiment station	61 10
	7.	S. H. Crossman, experiment station	46 66
	7.	E. Z. Davies, experiment station	22 30
	7.	R. T. Smith, experiment station	3 85
	7.	Mac Devin, experiment station	232 44
	9.	McIlroy & Co., experiment station	32 17
	9.	McIlroy & Co., student labor	6 82
	9.	Robert Dowell, experiment station	4 75
	9.	Mac Devin, experiment station	175 27
	10.	John Cate, experiment station	14 00
	10.	Treasurer A. I. U., for farm account experiment station	302 47
	10.	C. Dale, mechanical department	38 15
	11.	Mitchell & Bettis, printing	44 75
	11.	W. M. Simmons, experiment station	35 45
	11.	W. E. Anderson, experiment station	57 00
	12.	A. E. Menke, farm account	338 90
	13.	S. E. Marrs, painting	2 50
	14.	J. W. Duncan, experiment station	50 00
	14.	W. F. Bates, experiment station	59 73
	16.	McIlroy & Co., experiment station	226 04
	16.	McIlroy & Co., mechanical department	22 06
	16.	R. H. Willis, salary	83 34
	16.	L. M. Willis, salary	66 66
	17.	A. E. Menke, student labor	13 06
	17.	A. E. Menke, experiment station	124 40
	17.	J. M. Whitham, student labor	93 31
	17.	W. P. McNair, bill	5 57
	19.	A. C. Hoag, repairs	25 00
	19.	J. L. Cravens, experiment station	62 50
	19.	Byrnes & Blackmer, bill	19 50
	19.	J. M. Whitham	10 00
	19.	Duggan & Co., experiment station	72 50

CURRENT EXPENSE ACCOUNT.—Continued.

1888			
April 20	By amount	Sam Taff, student labor	\$ 70
20		J. A. Taff, library account	2 00
21		M. Murfee, messenger	3 00
21		W. F. Bates, experiment station	72 95
21		S. S. Twombly, experiment station	62 50
23		S. S. Twombly, experiment station	5 62
23		C. Dale, bill	12 50
23		E. B. Harrison, bill	1 15
23		Mac Devin, experiment station	340 00
23		A. Volner, medical department	35 00
23		McIlroy & Co., experiment station	136 50
23		J. H. Hobbs, salary	7 40
24		G. A. Warren, salary	7 40
24		Rumsey Bros., experiment station	205 00
27		J. L. Cravens, salary	125 00
27		J. T. Reynolds, bill	8 80
28		M. Murfee	1 50
28		W. F. Bates, experiment station	56 65
28		McIlroy & Co., experiment station	232 41
28		McIlroy & Co., student labor	1 77
28		A. E. Menke, experiment station	33 51
28		A. E. Menke, student labor	2 80
28		Byrnes & Blackmer, farm account	150 00
28		Byrnes & Blackmer, experiment station	65 57
28		George Norman, student labor	52
28		D. T. Beaman, experiment station	20 00
28		W. French, medical department	40 00
28		E. B. Harrison, farm account	149 00
28		Baum & Bros., bill	1 45
28		S. J. Jones, experiment station	4 55
30		R. T. Smith, experiment station	5 40
30		Thomas Brooks, experiment station	26 00
30		A. Volner, experiment station	9 77
30		Patridge & Reagan, experiment station	1 90
30		W. W. McCart, janitor	47 00
May 1		R. R. Dinwiddie, experiment station	83 33
1		W. F. Bates, student labor	100 00
1		Benbrook & Co., medical department	2 00
1		C. B. Collingwood, experiment station	83 33
2		S. H. Crossinan, experiment station	100 00
2		W. F. Bates, student labor	13 35
4		A. E. Menke, library	75 00
5		Mac Devin, experiment station	227 43
5		W. F. Bates, experiment station	77 20
5		W. A. Moore, experiment station	3 80
7		H. K. Wade, express	2 65
10		H. K. Wade, express	2 40
11		M. Murfee	3 00
11		McIlroy & Co., experiment station	727 26
11		Patridge & Reagan, printing	6 00
12		J. M. Whitham	10 75
12		W. F. Bates, experiment station	15 75
14		McIlroy & Co., experiment station	44 85
14		H. Edwards, library	15 00
15		W. P. McNair, bill	5 50
16		McIlroy & Co., medical department	4 79
16		Ida Pace, salary	11 10
16		H. M. Schaad, bill	10 00
18		J. L. Cravens, drainage account	2 47
18		J. L. Cravens, drainage account	2 08
19		R. R. Dinwiddie, experiment station	2 15
19		A. E. Menke, experiment station	11 70
19		J. York, experiment station	8 00
19		C. Dale, experiment station	30 00
23		G. C. Schaff, bill	14 25
24		H. K. Wade, bill	2 00
24		A. Thomas, experiment station	7 80
25		M. M. Manger, repairs	16 00
25		McIlroy & Co.	176 71
26		Byrnes & Blackmer, experiment station	1600 00
26		S. S. Twombly, experiment station	3 50
26		H. K. Wade, bill	1 40
29		H. K. Wade, express	10 40
29		McIlroy & Co., experiment station	455 92
29		M. Murfee	3 00

CURRENT EXPENSE ACCOUNT.—Continued.

1888				
May	31	By amount	J. H. Williams, stone wall.....	50 00
	31		W. W. McCart, janitor.....	47 00
June	1		W. W. Harrison.....	50
	1		W. W. Harrison, farm account.....	1 00
	1		W. H. Whitlow, repairs.....	26 30
	1		W. F. Bates, student labor.....	115 85
	1		W. C. Cardwell, bill.....	3 00
	1		W. F. Bates, experiment station.....	51 50
	1		Ed Hall.....	1 00
	1		Cora B. Lyon, art department.....	19 55
	5		Mac Devin, draft.....	250 65
	7		J. L. Cravens, experiment station.....	5 00
	8		M. Danaher, salary.....	14 10
	9		J. H. Williams, stone walk.....	200 00
	9		W. F. Bates, student labor.....	11 46
	9		W. F. Bates, experiment station.....	3 60
	9		A. E. Menke, experiment station.....	97 00
	9		E. B. Harrison, experiment station.....	37 00
	9		L. Gregg, experiment station.....	27 30
	9		J. M. Whitham, student labor.....	100 00
	9		J. M. Whitham.....	2 30
	9		Jo Cato, experiment station.....	5 25
	11		W. French, experiment station.....	19 00
	11		L. L. Simmon, student labor.....	3 00
	11		R. T. Smith, experiment station.....	5 25
	11		J. M. Whitham.....	1 46
	11		E. Harrison, bill.....	14 90
	11		C. H. Leverett, library.....	45 00
	15		M. Murfee, messenger.....	4 50
	16		C. Dale, lime.....	3 30
	16		A. Thomas, experiment station.....	9 70
	18		C. Dale, experiment station.....	19 05
	18		S. F. Douglas, experiment station.....	10 00
	18		McIlroy & Co., experiment station.....	495 54
	21		McIlroy & Co., experiment station.....	65 57
	21		Mollie Taft, library.....	10 00
	21		Mitchell & Bettis, experiment station.....	28 50
	21		Mitchell & Bettis, bill.....	20 25
	21		W. E. Whitford.....	1 50
	22		M. Murfee.....	1 50
	23		J. M. Whitham, repairing transit.....	50 80
	23		Cora B. Lyon, bill.....	15 00
	23		J. H. Williams, stone walk.....	150 00
	23		S. E. Marrs, printing.....	2 25
	26		J. H. Bowman.....	2 65
	26		H. K. Wade, bill.....	2 60
	26		Ida Pace, salary.....	33 35
	26		J. L. Cravens, experiment station.....	1 00
	28		George West.....	1 00
	28		Mac Devin, experiment station.....	173 95
	28		Miller & Rieff, experiment station.....	2 10
	29		Jo Poor.....	1 00
	29		Byrnes & Blackmer, bill.....	60 00
	29		Byrnes & Blackmer, roof.....	15 00
	30		E. H. Murfee, salary.....	495 00
	30		William Green, experiment station.....	7 40
	30		J. M. Whitham, salary.....	400 00
	30		A. E. Menke, salary.....	200 00
	30		H. Edwards, salary.....	375 00
	30		F. W. Simonds, salary.....	375 00
	30		J. F. Howell, salary.....	300 00
	30		C. H. Leverett, salary.....	250 00
	30		W. E. Anderson, salary.....	250 00
	30		S. S. Twombly, salary.....	125 00
	30		G. W. Droke, salary.....	200 00
	30		A. Waggener, salary.....	200 00
	30		N. J. Williams, salary.....	200 00
	30		J. C. Massie, salary.....	200 00
	30		C. B. Lyon, salary.....	200 00
	30		J. W. Mayo, salary.....	150 00
	30		L. C. Gardner, salary.....	100 00
	30		P. H. Babb, salary.....	150 00
	30		W. F. Bates, salary.....	150 00
	30		Lee Treadwell, salary.....	50 00
	30		K. V. King, salary.....	50 00

CURRENT EXPENSE ACCOUNT.—Continued.

1888				
June	30	By amount	W. N. Crozier, salary	33 35
	30		M. Danahar, salary	33 35
	30		G. A. Warren, salary	22 25
	30		J. H. Hobbs, salary	22 25
	30		Alice Polson, salary	29 62
	30		R. R. Dinwiddie, experiment station account	3 00
	30		W. P. McNair, fuel account	48 00
	30		E. H. Murfee, bill	17 05
	30		W. W. McCart, janitor	47 00
	July	2		J. H. Williams bill
2			W. F. Bates, student labor	129 13
2			E. Richmond, experiment station	250 00
2			R. R. Dinwiddie, experiment station	166 66
3			A. E. Menke, experiment station	424 05
3			J. L. Cravens, experiment station	125 00
3			J. L. Cravens, salary	125 00
3			J. Williams, experiment station	3 20
3			W. French, medical department	40 00
5			E. B. Harrison, medical department	12 50
5			McIlroy & Co., experiment station	546 42
5			E. B. Harrison	213 49
7			Jo Poor	1 00
7			Byrnes & Blackmer, experiment station	500 00
7			Byrnes & Blackmer, farm account	700 00
9			E. B. Harrison, bill	13 00
9			M. Murfee	3 00
9			Mac Devin, experiment station	125 40
10			McIlroy & Co., experiment station	294 71
11			H. A. Davis, experiment station	3 10
11			W. E. Whitford	3 50
11			W. F. Bates, experiment station	16 10
13			J. P. Marbut, fuel	15 75
13			J. P. Marbut, fuel	15 75
13			Mac Devin, experiment station	25 39
16			E. L. Fisher	1 00
17			Ed Crouch, fuel	30 75
18			W. F. Bates, experiment station	3 70
18			W. F. Bates, experiment station	5 70
18			J. L. Cravens, experiment station	5 00
20			C. Dale, experiment station	4 50
20			M. Murfee	3 00
20			R. J. Pence, experiment station	9 25
21			S. A. Lemons, fuel	36 00
21			McIlroy & Co., experiment station	426 32
21			E. Z. Davies, experiment station	11 20
21			F. W. Simonds	1 00
21			Mac Devin, experiment station	81 76
24			T. V. Munson, experiment station	13 75
26			W. F. Bates, experiment station	9 00
26			E. Squires, advertising	250 00
28			M. Johnson, labor	16 00
28			Simmons & Ferguson, experiment station	1 50
28			J. M. Whitham, student labor	80 00
28			Byrnes & Blackmer, medical department	22 00
28			G. W. Droke, repairs to cistern	15 00
31			W. French, medical department	40 00
31		W. W. McCart, janitor	47 00	
August	1		W. N. Crenshaw, bill	3 00
	1		Byrnes & Blackmer, experiment station	200 00
	1		A. B. Lewis, bill	4 85
	1		W. F. Bates, student labor	85 99
	1		M. Devin, experiment station	22 40
	1		S. F. Douglas, experiment station	17 85
	1		W. E. Anderson, medical department	3 90
	1		McIlroy & Co., experiment station	186 13
	3		M. Murfee	3 00
	3		A. E. Menke, experiment station	24 75
	3		E. B. Harrison, bill	5 50
	3		E. B. Harrison, work on roof	77 00
	4		W. M. Flynn	2 00
	4		W. A. D. Jones, experiment station	100 00
	7		S. J. Jones, experiment station	80
	7		R. S. Curry, experiment station	1 80
	7		R. S. Curry, bill	1 25
	7		McIlroy & Co., experiment station	46 19

CURRENT EXPENSE ACCOUNT—*Continued.*

1888			
Aug. 7.	By amount	W. F. Bates, experimental station	\$ 5 00
9		Wm H Edwards, bill	4 29
11		F. W. Simonds	51
11		E. Richman, experimental stations	34 55
11		A. E. Menke, experimental stations	43 50
14		McIlroy & Co., experimental station	50 85
14		W. A. D. Jones, experimental stations	106 37
16		R. T. Smith, experimental station	8 45
17		J. E. Crouch, fuel	9 68
17		M. Murfee	3 00
18		H. K. Wade, express	1 10
18		Mechanical department experimental station	57 30
18		C. Dale, mechanical department	30 80
20		G. A. Humphreys, experimental station	30 00
21		R. R. Denwiddie, experimental station	60 00
23		J. P. Marbut, fuel account	24 70
23		McIlroy & Co., experimental station	165 88
25		S. F. Douglas, experimental station	2 25
25		F. E. Martin, repairs	3 50
26		E. H. Murfee, for Dr. Garrison	30 00
27		W. F. Bates, experimental station	22 20
27		W. F. Bates, student labor	3 16
30		F. E. Martin, repairs	1 00
30		B. F. Walker, mechanical department	4 50
30		J. W. Kessee, trustee	51 65
30		W. F. Avera, trustee	49 00
30		Ida Pace, salary	22 20
31		S. F. Douglas, experimental station	3 00
31		James Mitchell, trustee	41 80
31		W. F. Bates, student labor	111 42
31		W. French, mechanical department	40 00
31		Simmons & Ferguson	4 50
31		M. Murfee	3 00
31		S. P. Hughes, trustee	20 55
Sept. 1		J. H. Hobbs, salary	14 80
1		G. W. Droke, student labor	9 15
1		G. W. Droke, repairs	2 00
1		G. A. Warren, salary	14 80
1		W. N. Crozier, salary	22 20
1		Ida Pace, clerk	7 50
1		W. W. McCart, janitor	47 00
1		W. W. McCart, janitor bill	30 30
4		Miss Taff, library	10 00
4		H. K. Wade, express	13 55
4		J. M. Whitham, student labor	35 00
5		C. B. Lyon, art department	4 86
6		W. P. McNair, experimental station	12 60
6		McIlroy & Co., draft	168 05
7		J. M. Whitham, student labor	15 00
8		W. D. Anderson, mechanical department	3 42
10		W. C. Cardwell, bill	9 75
10		J. P. Marbut, fuel	79 00
11		A. B. Lewis, bill	4 00
13		J. P. Marbut	39 50
13		McIlroy & Co., experimental station	704 80
14		McIlroy & Co., experimental station	147 47
14		M. Murfee	3 00
15		S. E. Marrs, bill	1 50
15		Byrnes & Blackmer, repairs	25 00
15		Byrnes & Blackmer, experimental station	60 00
15		J. E. Crouch, fuel	12 81
26		W. B. Welch, trustee	7 50
27		McIlroy & Co., experimental station	77 01
27		R. R. Dinwiddie, experimental station	56 00
27		G. A. Humphreys, experimental station	30 00
28		S. F. Douglas, experimental station	4 00
28		M. Murfee	1 50
29		Ida Pace, clerk	15 00
29		W. French, mechanical department	40 00
29		Byrnes & Blackmer, bill	24 70
29		Patridge & Reagan, printing	1 50
29		W. F. Bates, experimental station	10 80
29		W. W. McCart, janitor	47 00
29		F. W. Simonds, biology account	23 50
29		Benbrook & Co., bill	2 15

CURRENT EXPENSE ACCOUNT—*Continued.*

1888			
Oct.	1	By amount	\$ 5 00
...	1	E. H. Murfee, salary	496 66
...	1	H. Edwards, salary	375 00
...	1	J. M. Whitham, salary	400 00
...	1	A. E. Menke, salary	200 00
...	1	F. W. Simonds, salary	375 00
...	1	J. F. Howell, salary	300 00
...	1	C. H. Leverett, salary	250 00
...	1	W. E. Anderson, salary	250 00
...	1	S. S. Twombly, salary	125 00
...	1	G. W. Droke, salary	200 00
...	1	A. Waggoner, salary	200 00
...	1	N. J. Williams, salary	200 00
...	1	J. C. Massie, Jr., salary	200 00
...	1	C. B. Lyons, salary	210 00
...	1	J. W. Mays, salary	150 00
...	1	W. F. Bates, salary	150 00
...	1	P. H. Babb, salary	150 00
...	1	Lee Treadwell, salary	50 00
...	1	K. V. King, salary	50 00
...	1	O. C. Gray, salary	125 00
...	1	J. L. Cravens, salary	125 00
...	1	E. S. Richman, experimental station	125 00
...	1	C. W. Woodworth, experimental station	300 00
...	1	J. L. Cravens, experimental station	135 00
...	1	Ida Pace, salary	22 25
...	3	W. F. Bates, student labor	154 00
...	4	Patridge & Reagan, printing	4 00
...	5	McIlroy & Co., experimental station	897 31
...	6	Henry, Seibert & Bro, bill	43 25
...	6	R. R. Denwiddie, experimental station	250 00
...	6	A. E. Menke, experimental station	13 15
...	6	W. F. Bates, experimental station	20 50
...	6	McIlroy & Co., experimental station	418 90
...	6	J. A. Everett & Co., experimental station	2 75
...	9	G. A. Humphrey, experimental station	80 00
...	10	J. W. Queen & Co, farm account	118 00
...	11	G. W. Droke, student labor	1 33
...	11	W. M. Fishback, trustee	15 10
...	13	M. Murfee	1 50
...	13	S. J. Young, bill	2 00
...	13	S. E. Marrs, printing	1 00
...	16	J. E. Crouch, fuel	31 88
...	16	J. L. Cravens, paid for advertising	5 00
...	17	E. Murfee	1 50
...	19	Mac Devin, experimental station	77 30
...	20	McIlroy & Co., experimental station	287 16
...	20	W. E. Anderson, student labor	92 40
...	20	Mac Devin, farm account	60 28
...	25	P. H. Babb, bill	2 05
...	26	D. C. Aiken, student labor	5 25
...	26	M. Murfee	1 50
...	27	B. B. Woodard, student labor	4 20
...	27	J. C. Harrod, library	2 00
...	28	J. L. Cravens, experimental station	5 00
...	29	W. T. Sweeney, mechanical department	16 50
...	30	E. S. Richman, experimental station	4 25
...	31	S. J. Jones, experimental station	1 35
...	31	W. W. McCart, janitor	47 00
Nov.	1	J. D. VanWinkle, bill	5 00
...	1	W. French, labor	23 50
...	1	E. B. Harrison, bill	34 20
...	1	W. C. Cardwell, bill	7 85
...	1	J. L. Duke, clock	22 50
...	2	H. K. Wade, express	2 25
...	2	W. F. Bates, student labor	160 00
...	2	W. F. Bates, experimental station	30 00
...	3	Mitchell & Bettis, bill	46 25
...	3	McIlroy & Co., experimental station	273 65
...	3	Ida Pace, clerk	15 00
...	3	S. A. Horton, library	2 00
...	3	Taylor Bros., bill	2 40
...	6	Mac Devin, experimental station	8 25
...	8	W. E. Anderson, advertising	10 00
...	10	M. Murfee	1 50

CURRENT EXPENSE ACCOUNT—*Concluded.*

1888			
Nov. 10.....	By amount	H. Edwards, library	71 00
... 10		E. S. Richardson, experimental station.....	38 20
... 10		W. F. Bates, experimental station.....	8 55
... 12.....		R. R. Dinwiddie, experimental station.....	1 60
... 13.....		E. E. Squires, advertising	370 00
... 14.....		P. H. Babb, repairs.....	1 85
... 15.....		A. E. Menke, experimental station.....	35 00
... 16.....		Thomas Jennings, mechanical department.....	2 45
... 16.....		E. H. Murfee, library	45 00
... 17.....		J. C. Benbrook, library.....	2 00
... 20.....		F. M. Brooks, farm	27 00
... 22.....		A. L. Williams.....	5 85
... 23.....		H. Murfee.....	1 50
... 23.....		W. R. Harvey, library	4 00
... 23.....		J. L. Cravens, postage	80 00
... 26.....		W. E. Whitford, janitor	2 25
... 26.....		W. W. McCart, janitor	47 00
... 26.....		George T. Lake, bill.....	1 50
... 27.....		McIlroy & Co, experimental station	180 15
... 27.....		McIlroy & Co., experimental station	24 89
... 27.....		E. L. Fisher, bill.....	11 80
			<hr/>
... 30.....		balance on hand	\$88,813 73
			9,547 60
			<hr/>
Total.....			\$98,361 33

SALARY ACCOUNT.

June, 1887—To amount of estimate to March 31. 1889	\$ 31,194 00	
CONTRA.		
By amount expended to pay teachers.....		\$ 20,524 27
Nov. 30, 1888—By amount to balance.....		10,669 73
Total.....		\$ 31,194 00

LADIES' INDUSTRIAL ART DEPARTMENT.

June, 1887—To amount of estimate	\$ 160 00	
To amount sundries.....	6 60	
CONTRA.		
	\$ 166 60	
By amount unexpended		\$ 148 98
November 30, 1888—By amount to balance.....		17 62
Total.....		\$ 166 60

BIOLOGY ACCOUNT.

To amount of estimate.....	\$ 298 40	
To amount overdrawn.....	2 68	
CONTRA.		
	\$ 301 08	
Nov. 30, 1888—By amount expended.....		\$ 301 08
Total		

DRAINAGE ACCOUNT.

To amount from last report.....	\$ 8 97	
CONTRA.		
Nov. 30, 1888—By amount expended.....		\$ 7 9:

DORMITORY ACCOUNT.

To amount State appropriation.....	\$ 17,000 00	
To amount appropriation by Board of Trustees	350 00	
CONTRA.		
	\$ 17,350 00	
By amount expended		\$ 17,349 19
Nov. 30, 1888—By amount to balance.....		91
See Total		\$ 17,350 00

FARM ACCOUNT.

To amount State appropriation.....	\$ 8,000 00	
To amount all other sources.....	2,232 46	
	\$10,232 46	
CONTRA.		
By amount expended.....		\$ 10,152 86
By amount to correct error.....		54 79
November 30, 1888—By amount balance forward.....		25 31
Total.....		\$ 10,232 46

FUEL ACCOUNT.

To amount of estimate to March 31, 1889.....	\$ 1,000 00	
CONTRA.		
By amount expended.....		\$ 843 27
Nov. 30, 1888—By amount balance.....		156 73
Total.....		\$ 1,000 00

JANITOR ACCOUNT.

To amount of estimate to March 31, 1889.....	\$ 1,050 00	
CONTRA.		
By amount expended.....		\$ 1,024 70
Nov. 30, 1888—By amount balance.....		25 30
Total.....		\$ 1,050 00

INSURANCE ACCOUNT.

To amount on hand last report.....	\$ 135 76	
To amount for policies surrendered.....	185 95	
CONTRA.		
By amount expended.....		\$ 320 50
Nov. 30, 1888—By amount balance on hand.....		1 21
Total.....		\$ 321 71

LIBRARY ACCOUNT.

To amount estimate to March 31, 1889.....	\$ 800 00	
CONTRA.		
By amount expended.....		\$ 799 20
Nov. 30, 1888—By amount balance.....		80
Total.....		\$ 800 00

LIBRARY DEPOSIT ACCOUNT.

To amount on hand last report.....	\$ 22 15	
To amount received from students.....	32 00	
	\$ 54 15	
CONTRA.		
By amount refunded.....		\$ 47 30
Nov. 30, 1888—By amount balance on hand.....		6 85
Total.....		\$ 54 15

MISCELLANEOUS ACCOUNT.

To amount of estimate.....	\$ 1,573 00	
To amount from sundries.....	31 90	
To amount over estimate.....	177 28	
	\$ 1,782 18	
CONTRA.		
Nov. 30, 1888—By amount expended.....		\$ 1,782 18
Total.....		\$ 1,782 18

MECHANICAL DEPARTMENT.

To amount State appropriation.....	\$ 7,000 00	
To amount appropriated by Board of Trustees.....	1,100 00	
To amount all other sources.....	623 65	
To amount over estimate to balance.....	433 85	
	\$ 9,157 50	
CONTRA.		
By amount expended.....		\$ 9,107 50
Nov. 30, 1888—By amount to correct error in entry.....		50 00
Total.....		\$ 9,157 50

POSTAGE ACCOUNT.

To amount of estimate.....	\$ 250 00	
CONTRA.		
By amount expended.....		\$ 185 73
Nov. 30, 1888—By amount balance.....		64 24
Total.....		\$ 250 00

REPAIRS ACCOUNT.

To amount of estimate	\$ 614 00	
CONTRA.		
By amount expended.....		\$ 425 00
Nov. 30, 1888—By amount balance.....		189 00
Total		\$ 614 00

ROOF ACCOUNT.

To amount on hand last report.....	\$ 342 60	
CONTRA.		
By amount expended.....		\$ 121 00
Nov. 30, 1888—By amount balance on hand.....		221 00
Total		\$ 342 60

STATIONERY AND ADVERTISING ACCOUNT.

To amount estimate.....	\$ 600 90	
To amount over estimate to balance.....	1,252 33	
CONTRA.		
	\$ 1,752 33	
Nov. 30, 1888—By amount unexpended.....		\$ 1,752 33
Total		\$ 1,752 33

STUDENT LABOR ACCOUNT.

To amount of State appropriation.....	\$ 5,000 00	
To amount sundries.....	22 25	
CONTRA.		
	\$ 5,022 25	
By amount expended.....		\$ 1,837 89
Nov. 30, 1888—By amount balance on hand.....		3,184 36
Total		\$ 5,022 25

TRUSTEES ACCOUNT.

To amount estimate to March 31, 1889	\$ 1,478 00	
CONTRA.		
By amount expended.....		\$ 936 90
Nov. 30, 1888—By amount balance.....		541 10
Total		\$ 1,478 00

TUITION ACCOUNT.

To amount of sundry students.....	\$ 2,315 80	
CONTRA.		
By amount tuition refunded		\$ 1 65
Nov. 30, 1888—By amount paid Treasurer		2,314 15
Total.....		\$ 2,315 80

SECRETARY AND TREASURER'S ACCOUNT.

To amount estimate to March 31, 1889.....	\$ 1,000 00	
CONTRA.		
By amount expended to September 30, 1888.....		\$ 750 00
Nov. 30, 1888—By amount balance.....		250 00
Total		\$ 1,000 00

EXPERIMENTAL STATION ACCOUNT.

To amount received of United States Treasurer	\$ 18,750 00	
To amount received from other sources.....	71 05	
To amount overdrawn.....	1,607 20	
	\$ 20,428 25	
CONTRA.		
Nov. 30, 1888—By amount expended		\$ 20,428 25
Total.....		\$ 20,428 25

REPORT
OF THE
SUPERINTENDENT OF MECHANIC ARTS
AND
PROFESSOR OF ENGINEERING.

NOVEMBER 12, 1888.

REPORT OF THE MECHANICAL DEPARTMENT.

DEPARTMENT OF MECHANIC ARTS AND ENGINEERING, }
ARKANSAS INDUSTRIAL UNIVERSITY, }
FAYETTEVILLE, ARK., Nov. 22, 1888. }

Col. E. H. Murfree, President of the Arkansas Industrial University; Fayetteville, Ark.

SIR: I beg leave to submit the following report of the Department of Mechanic Arts and Engineering for the past year:

HISTORY OF DEPARTMENT.

The Department was organized, by requirement of the last Legislature, in June, 1887. The spirit of the act incorporating this department was that all male students of the University should work at manual labor for three hours of each day, being paid therefor from three to ten cents per hour. The Honorable Board of Trustees was required to provide for this manual labor. In doing so they found the seven thousand (7,000) dollars specially appropriated to this department insufficient for the equipment of shops that would accommodate *all* the male students at one time. In fact, the amount would provide accommodations for but fifty (50) students at one time. Hence,

as it is manifestly absurd for students in Manual Training and Engineering to work on the farm, the three hours per day *manual* labor required by law was construed to mean three hours per day of *practical* labor. Practical labor was declared to mean, not only farm and shop work, but also drawing, surveying and laboratory practice. This was not only a convenience in order to accommodate all the students at practical exercises at one time, but was an absolute necessity, since surveying, drawing and laboratory practice are essential to many of the courses of instruction, and these branches could be provided for in no other way.

For two years previously, instruction, to a limited extent, had been given to all students in shop work, the shop being equipped at an expense of about three thousand (3,000) dollars, and located in a small frame building. The capacity of this shop was eighteen (18) students at one time. The time devoted to work in this shop was one hour and forty minutes a week, divided into two equal periods.

ORGANIZATION.

The present Department of Mechanic Arts and Engineering was organized in June, 1887, with

One Superintendent of Mechanic Arts and Professor of Engineering.

One Adjunct Professor of Engineering and Superintendent of Shops.

One Instructor in Metal Work.

One Instructor in Wood Work.

One Instructor in Forge and Foundry Practice.

One Instructor in Field Engineering (Surveying Practice),
and

One Fireman and Engine Driver.

The summer of 1887 was spent in equipping the new shops. They were, by requirement of law, placed in the basement of the main building. The basement was floored, partitioned off into rooms, whitewashed and made ready for the machinery. The machinery of the old shop was removed to the new shops,

new machinery was purchased, and the shops were ready for use by September 20, 1887.

EQUIPMENT.

A condensed statement of the expenditures of this department is appended hereto and marked "Exhibit A." It may be here noted that all the shop equipments were bought with liberal discounts. The equipment of the shops is shown in the inventory appended hereto, and marked "Exhibit B." This is also shown in the last University Catalogue, together with a cut of the shops.

MANUAL TRAINING.

It is scarcely necessary to here enter into a discussion of the subject of *manual training*. However, it may be well to preface the description of our course in shop work by a few remarks upon it. Industrial development, comfort and enlightenment go hand-in-hand. Wherever the former exists, the others follow as a natural sequence. It is evident that all men cannot follow the literary professions, and that the great mass of the people *must* engage in industrial pursuits. Hence the phenomenal growth, in recent years, of manual training schools. These schools are intended to prepare young men to earn their livelihood as artizans. They take the place of the old apprenticeship system (now obsolete), and at the same time give a good general education to the youth. This puts him far ahead of the apprentice boy, wherever found; for he not only knows *how* to do, but also *why* the work is done in such and such a way. In other words, manual labor tends to develop *intelligent laborers* and *skilled labor*, which can be produced only by industry, properly systematized, and good judgment. This latter is cultivated by a graded course of exercises in shop-work, supplemented by the mental discipline given in the classroom.

INSTRUCTION IN SHOPS.

Manual training, as here pursued, consists in going through a graded system of exercises, each lesson involving the principles used in completing all of the preceding tasks. The train-

ing shops are not restricted to the production of a certain class of articles of commercial value, but the students have exercise in producing a great variety of articles. It would be unwise to require a student, during a large part of his shop course, to work at but *one* machine, making *one* part of a certain article. The student must have practice with the uses of all the machines of the shop. The course of exercises is so extensive and thorough that the principles involved are certain to be understood—and in no slipshod manner. The exercises given are similar to those used at all the leading schools of this character in the United States.

Instruction in manual training begins with the "A" class, and, extending over four years, ends with the sophomore year. Junior and senior students have advanced work. The distribution of students and classes among the various departments of the shop is shown on page 51 of the catalogue 1887-8, while the time devoted to practical exercises is given on page 50. The course of shop exercises is given in "Exhibit E," appended.

SHOP PRODUCTS.

The shop products are given in "Exhibit D," hereto appended.

SHOPS CROWDED.

As stated, the capacity of the shops is fifty (50) students at one time, yet this is inadequate for present needs, since students have often been sent away from them. As many as thirty (30) students have been refused, at one time, access to the already crowded shops. Hence, enlarged shop capacity is a present necessity. *Provision should be made for the accommodation of not less than one hundred (100) students at one time.* With such a capacity, the shop is certain to be filled as the University becomes developed.

OBJECTIONS TO HAVING SHOPS IN THE BASEMENT.

Great inconvenience has been experienced by all in attendance upon the University from the presence of the shops in the basement of the main building. The smoke, fuel gases and

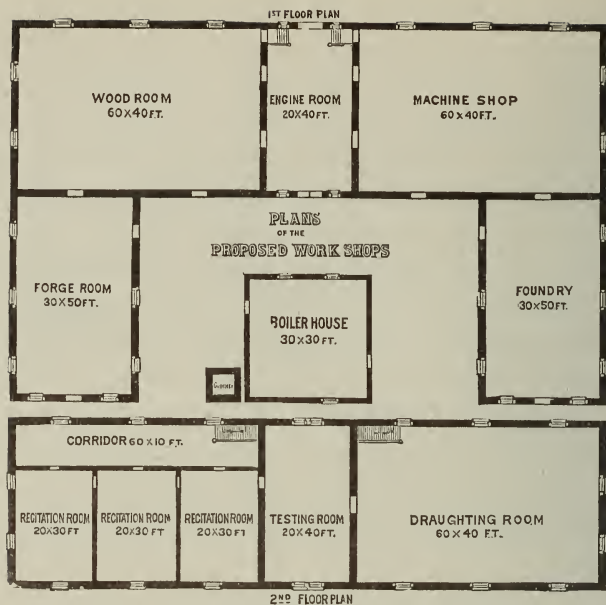
dust from the forge and foundry have not only been sufficient cause for students leaving the University, but have filled the entire building, rendering certain parts uninhabitable while the shops are running, and defacing the walls and wood work to no small degree. *But the greatest damage to the building consists in the floor-vibrations while the shops are in motion.* It is possible for these to seriously injure the building. The danger from fire and spontaneous combustion is great, and the presence of steam boilers in the basement, carrying a high pressure of steam, may imperil the safety of the building and the lives of its occupants.

URGENT NEEDS.

It is therefore apparent that (1) the capacity of the shops should be increased to one hundred (100) students at one time, and (2) that they should be located in a separate building suited for their use.

NEW BUILDING FOR SHOPS.

As the result of a great deal of study and correspondence had with similar schools and representative manufacturers in all parts of the United States, Adj. Prof. W. E. Anderson offers the following design for a new shop building, in which I most heartily concur. The main part of the building should be of two stories, with a floor plan of one hundred and forty (140) by forty (40) feet, with two wings (thus forming three sides of a quadrangle), each one story high and forty by fifty feet. These dimensions will provide for the following rooms: (*See plans of proposed shops.*)



GROUND FLOOR.

Machine Shop—40x60 feet, accommodating 25 students.

Wood-working Shop—40x60 feet, accommodating 30 students.

Forge Room—30x50 feet, accomodating 20 students.

Foundry—30x50 feet, accommodating 20 students.

Engine Room—20x40 feet, accommodating 1 student.

SECOND FLOOR.

Testing Room—20x40 feet, accommodating 3 students.

Drawing Room and Mechanical Museum—40x60 feet, accommodating 50 students.

Three Recitation Rooms, each 20x30 feet, for use in hearing classes in mechanical and engineering subjects.

The boiler-house and coal-bin would be 30x30 feet and located in the rear court, separate and distinct from the shops, and include a brick stack, or chimney. The buildings are to be of brick, and as nearly fire-proof as is possible.

TABLE SHOWING SHOP EQUIPMENT OF OTHER SCHOOLS.

Before giving estimates as to the cost of the building just proposed, it may be well to see how other schools doing simi-

lar work, are equipped. Prof. Anderson has prepared the following table from correspondence held with officers in the schools named :

NAME OF SCHOOL OF MANUAL TRAINING.	ROOMS.									
	Cost of Shop buildings.	Cost of Shop equipment.	Number of Students accommodated at one time.	Number of Students taking shop work.	Cost of Equipments per Student accommodated at one time.	Cost of Shops complete, including building, per student accommodated at one time.	Number of Instructors in Shopwork.	Salary of Instructors in Shopwork.	Pay of Superintendent of Mechanical Department.	Wood, metal, forge, foundry.
Miller Manual Labor School, Virginia	\$ 31,000	24,300	27	50	\$ 486	\$ 2,045	7	\$ 800 to \$1,400	\$ 1,500	Wood, metal, forge, foundry.
University of Illinois	10,000	25,000	56	70	268	446	2	960 to 1,500	2,000	..
Perdue University, Indiana	10,000	15,000	56	130	268	446	2	960 to 1,500	4,500	..
Chicago Manual Training School	50,000	13,700	87	191	158	732	5	900 to 1,500	3,000	Wood, metal, forge.
Sibley College, Cornell	15,000	32,000	81	154	395	580	5	372 to 1,200	..	Wood, v. s. work, forge.
Tulane University, Louisiana	15,000	18,000	30	250	600	1,100	5	600 to 1,100	..	Wood, metal, forge.
A. and M. College, Maine	2,500	2,200	8	20	275	588	1	500 to 1,200	2,250	Wood, metal, forge, foundry.
Massachusetts Institute of Technology	6,700	8,000	18	200	444	817	3	750 to 900	..	..
Swathmore College, Pennsylvania	13,000	8,800	20	250	98	242	4	1,000 to 1,000	2,250	Metal.
Washington University, St. Louis	5,000	8,000	24	18	333	542	1	600 to 1,200	4,500	Wood, metal, forge.
University of Ohio	10,000	10,400	90	150	115	227	3	400 to 600	1,600	Wood, metal, forge, foundry.
College of City of New York	..	8,000	50	130	160	..	3	..	..	..
Arkansas Industrial University	..	..	..	..	..	..	..	..	..	..

From the table it is seen that no school having a shop capacity approaching one hundred (100) students at one time has been equipped with machinery at a less cost than \$13,000 to \$30,000, nor provided with a shop building at a cost differing much from \$15,000.

The following estimates have been carefully made and are the *least figures* for which a new building, suitably equipped for one hundred students, can be constructed in this locality, when the cost of labor, materials and freight have been duly considered. This is over and above the equipments already on hand, which will, of course, be utilized for the new shops.

COST OF NEW SHOPS.

Cost of shop building, including boiler-house, chimney and a large cistern	\$ 15,100 00	
Cost of equipments for—		
Heating building	\$ 800 00	
2 40-H. P. boilers, set ready for use	1,000 00	
1 40-H. P. engine, on exchange for present engine	900 00	
Testing room	2,100 00	
Metal room	3,000 00	
Wood room	1,200 00	
Forge room	1,100 00	
Foundry	800 00	
Recitation rooms	100 00	
Drawing room	200 00	11,200 00
Estimated cost of new shop building and extra equipments		\$26,300 00

ENGINEERING.

The courses in civil and mechanical engineering are well developed and represented by faithful students. The work done during the past year has been satisfactory to me in every detail. Classes have been taught in steam, hydraulic, sanitary, bridge, and road engineering, elementary and applied mechanics, specifications and laws of contracts, surveying, work-shop appliances, roads, streets and pavements, and in descriptive

geometry. The course in civil engineering is represented by students in every class, while the two lower college classes have mechanical engineering students. As these students are advanced, it will be necessary to either divide my chair, making professorships in civil and mechanical engineering, or else to give me more assistants in engineering branches.

DRAWING AND SURVEYING.

The work done by the students in mechanical drawing and surveying has been satisfactory.

GORDON ENGINEERS' CLUB.

The Gordon Engineers' Club, named in honor of the late Prof. J. B. Gordon of this University, is a student organization holding weekly meeting. The character of their work is such as to warrant a statement that the benefit to its members is fully equal to that obtained by the study of any single subject in their course.

ENGINEERING MUSEUM.

The Engineering Museum is gradually becoming more and more useful to the students, and will be found of great benefit to the department. A fuller description of this is given on page 61 of the catalogue 1887-8.

CHANGES RECOMMENDED.

The following recommendations are suggested as the result of the past year's work:

1. That shop work cease with the sophomore year for all students, and that the practical work of the junior and senior years consist only of such exercise as shall best fit the student for his life's work. For instance, let a mechanical engineering student spend these last two years in the drawing and testing rooms; a scientific student spend all his time in the laboratory, etc.

2. That ten cents an hour be paid for shop work, as the three cents now paid fails in aiding the poor student in working his way through the University. The practice of paying ten cents an hour for farm work and three for shop work results

in many boys being obliged to give up their wish of becoming mechanics or engineers. The student should be free to choose the course he thinks he is best fitted for, and encouraged in pursuing his selected course of instruction.

3. That the pay of instructors in shop work be raised, as we are now paying less than any one of the eleven schools named in the preceding table, and not enough to keep men here when they are prepared to be of most service to us. With the present pay we can expect to keep the shop instructors only so long as they do not receive a better position elsewhere. Their duty and training prepare them for a position commanding at least \$1000 a year.

PHYSICS.

The honorable Board of Trustees in January, 1888, finding that the subject of physics must be taught at the University, and that no chair was really ready to assume it, finally assigned it to the mechanical department. This involves 'three terms' work in the freshman year, one term in the sophomore year and one in the senior year. I respectfully request that you urge the Board to make some other disposition of this subject.

An inventory of the equipments of the physical laboratory is hereto appended and marked "Exhibit C." The apparatus is not extensive nor of a high quality. An appropriation of at least \$1000 a year should be made for several years in order to equip the laboratory for only a general course in physics.

Respectfully submitted,

J. M. WHITHAM,

Supt. of Mechanic Arts and Prof. of Engineering.

EXHIBIT A.
CONDENSED STATEMENT OF EXPENDITURES
FOR THE
MECHANICAL DEPARTMENT.
1887-8.

EXHIBIT A.

APPENDED TO THE REPORT OF THE MECHANICAL DEPARTMENT.

Condensed Statement of Expenditures and Receipts.

Extra salary.....	\$ 290 00	
Labor	1,145 87	
Freights	465 53	
Hauling	30 20	
Equipment.....	5,221 39	
Running expenses	1,399 77	
Miscellaneous	86 95	
Fireman's salary	410 00	
Drawing room	472 99	
Outstanding bills.....	289 35	
	<hr/>	
Total expenditures to date.....	\$ 9,812 05	
Received from the state.....	\$7,000 00	
Received from other sources.....	2,450 40	
Assets	353 20	
	<hr/>	
Total receipts	\$9,803 60	\$ 9,803 60
	<hr/>	
Expenditures over receipts.....	\$	8 45

EXHIBIT B.

Inventory of Shop and Drawing-Room Equipments.

NOVEMBER, 1888.

EXHIBIT B.
INVENTORY OF SHOP AND DRAWING-ROOM EQUIPMENT.
DRAWING-ROOM.

CONDITION.	ARTICLE.	VALUE.
Good	12 large drawing boards	\$ 24 00
..	12 intermediate drawing boards	18 00
..	2 extra large drawing boards	5 00
..	12 T squares	6 00
..	1 polar planimeter	20 00
..	1 steam engine indicator	50 00
..	1 pantograph	2 00
..	1 blue print frame	10 00
..	1 sink	2 00
..	Miscellaneous assortment of engr.'s stationery	10 00
..	10 double drawing tables	100 00
..	3 quadruple drawing tables	80 00
..	1 solar transit	200 00
..	1 engineer's transit	150 00
..	1 compass	60 00
..	1 Y level	100 00
..	1 plane table	100 00
..	2 steel tapes	15 00
..	1 R. R. chain, 1 Gunter's chain, 2 level rods, etc	15 00
Fair	30 stools	30 00
	Estimated market value	\$ 947 00

FOUNDRIY.

CONDITION.	ARTICLE.	VALUE.
Good	1 Collian cupola	\$ 150 00
..	1 brass furnace	35 00
..	1 Buffalo blower	30 00
..	2 ladles	7 00
..	2 graphite crucibles	1 00
..	1 exhaust fan	20 00
..	21 flasks, assorted sizes	10 00
..	1 sand sieve	2 00
..	7 sets of moulder's tools	35 00
..	Benches, shelves, etc.	12 00
..	Sand, etc	8 00
	Estimated market value	\$ 310 00

FORGING ROOM.

CONDITION.	ARTICLE.	VALUE.
Good	7 forges with hoods	
..	7 anvils	
..	7 sets of forging tools	
..	1 set of hardies	
..	1 large vise	
..	3 ten-pound sledges	
..	1 set of bolt-heading tools	
	Estimated market value	\$ 325 00

WOOD ROOM.

CONDITION.	ARTICLE.	VALUE.
Good	4 turning lathes.....	\$ 140 00
.....	3 turning lathes to be mounted.....	90 00
.....	1 band sawing machine with saws.....	80 00
Fair	1 scroll saw.....	40 00
Good	1 double circular saw.....	175 00
.....	1 small planing machine.....	75 00
.....	1 steam glue heater with pots.....	9 00
.....	8 double benches.....	96 00
.....	16 sets of bench tools consisting of 1 set of non-cutting and 2 sets of cutting tools.....	192 00
.....	7 vises.....	35 00
.....	Estimated market value.....	\$ 932 00

MACHINE SHOP.

CONDITION.	ARTICLE.	VALUE.
Good	1 Universal milling machine.....	\$ 425 00
.....	1 engine lathe 14x6, Reed.....	175 00
.....	2 engine lathes 14x6, Blaisdell.....	350 00
.....	1 combination lathe chuck.....	30 00
.....	1 engine lathe 19x9, L. D. & Co.....	325 00
.....	1 planing machine 24x24x72.....	400 00
.....	2 jack screws.....	3 00
.....	1 planing machine 10x10x24.....	75 00
Good	1 chuck for small planing machine.....	5 00
.....	1 pair of centers for small planing machine.....	5 00
Poor	1 grindstone.....	5 00
Good	1 No. 5 emery grinding machine.....	40 00
Fair	1 small speed lathe.....	40 00
Poor	1 engine lathe 12x36.....	125 00
Fair	1 Pive vise, swivel bottom.....	6 00
Good	5 large machinist's vises.....	35 00
.....	5 small machinist's vises.....	30 00
.....	5 double work-benches.....	60 00
.....	1 black board.....	2 00
.....	Estimated market value.....	\$ 2,136 00

TOOL ROOM.

CONDITION.	ARTICLE.	VALUE.
Good	2 centering squares.....	\$ 4 00
.....	1 bevel protractor.....	3 75
.....	1 micrometer caliper.....	4 75
.....	1 thread gauge.....	1 00
.....	1 surface gauge.....	2 00
.....	3 center gauges.....	1 20
.....	1 12-inch steel try-square.....	8 00
.....	1 6-inch steel try-square.....	4 25
.....	2 4-inch steel try-squares.....	6 00
.....	1 4-inch steel flat-square.....	1 50
.....	1 3-inch steel flat-square.....	1 20
.....	1 2-inch steel flat-square.....	75
Damaged	Set of drills.....	12 00
.....	Set of tap drills.....	6 00
Good	Set of reamers.....	18 00
.....	1 pair snips.....	1 50
.....	1 pair pliers.....	1 00
Damaged	1 hack saw.....	75
.....	1 set steel figures.....	1 25
.....	2 countersinks.....	75

TOOL ROOM—*Continued.*

CONDITION.	ARTICLE.	VALUE.
Broken	2 small drill chucks	Nothing
Good	1 face-plate center	\$ 1 00
	2 soldering coppers	2 00
	1 set screw drivers	3 40
Damaged	1 pipe cutter	1 50
Good	3 pair pipe tongs	3 75
	Plumbing tools	14 50
Damaged	1 set taps with wrenches	12 00
	1 set dies with stocks	10 00
Good	1 ratchet drill	5 00
	1 set hand turning tools	1 50
Damaged	3 steel rules	2 25
Good	1 spirit level	1 50
Damaged	1 linen tape	1 25
Good	Hand vise	1 50
Damaged	Clamp dogs	4 00
Good	Cabinet clamps	11 00
Damaged	Wooden clamps	
	Braces	4 50
	2 sets bits	10 00
	Monkey wrenches	9 90
	Dust brushes	7 00
Good	Scales	3 60
	Chisels	3 60
	Hammers	8 00
	Oil cans	2 00
	Punches	1 95
	File cards	40
Damaged	Calipers	4 80
	Dividers	2 40
	Bits	1 75
Good	Dividers wing	2 70
	Calipers wing	60
	Scroll saws	1 40
Damaged	Hand saws	3 50
	Spring plane	2 50
Good	2 6-inch try squares	30
	1 2-foot framing square	1 50
	2 cast-iron shrink rules	1 50
	3 spoke shaves	75
Poor	2 oil stones	50
Good	3 drawing knives	3 50
	5 auger bits and handle	5 00
	1 oil stove	6 00
	12 patent file handles	1 25
	An assortment of files	20 00
	5 marking gauges	1 25
	3 mortise gauges	90
	2 mallets	1 00
	8 sets of wood turning tools	20 00
	70 pounds brass	14 00
	30 pounds waste	3 30
	Wash-room equipments	46 00
	Stock of belting	15 00
	9 hand scrapers	2 70
	2 emery wheels	4 00
	Assortment of emery cloth	2 00
	6 scratch awls	60
	11 pair of copper vise jaws	1 60
	10 bench boxes	3 50
	1 belting	25
	4 lathe tool boxes	1 00
	40 lathe tools	6 00
	Estimated market value	\$ 389 20

SUPPLIES.

ARTICLES.	VALUE.
400 pounds pig iron.....	\$ 16 00
800 pounds scrap iron.....	16 00
3½ tons coke.....	42 00
25 pounds tin.....	7 00
350 pounds copper.....	68 00
150 pounds mach. steel.....	7 50
600 pounds wrought iron.....	24 00
2000 feet walnut lumber.....	75 00
500 feet oak lumber.....	8 75
Estimated market value.....	\$ 259 25

SUMMARY.

Showing Estimated Value of Work-shop and Drawing-room Equipments.

Drawing room.....	\$ 947 00
Foundry.....	310 00
Forge room.....	325 00
Wood room.....	932 00
Machine shop.....	2,136 00
Supplies.....	259 25
Tool room.....	389 20
Total.....	<u>\$ 5,298 45</u>

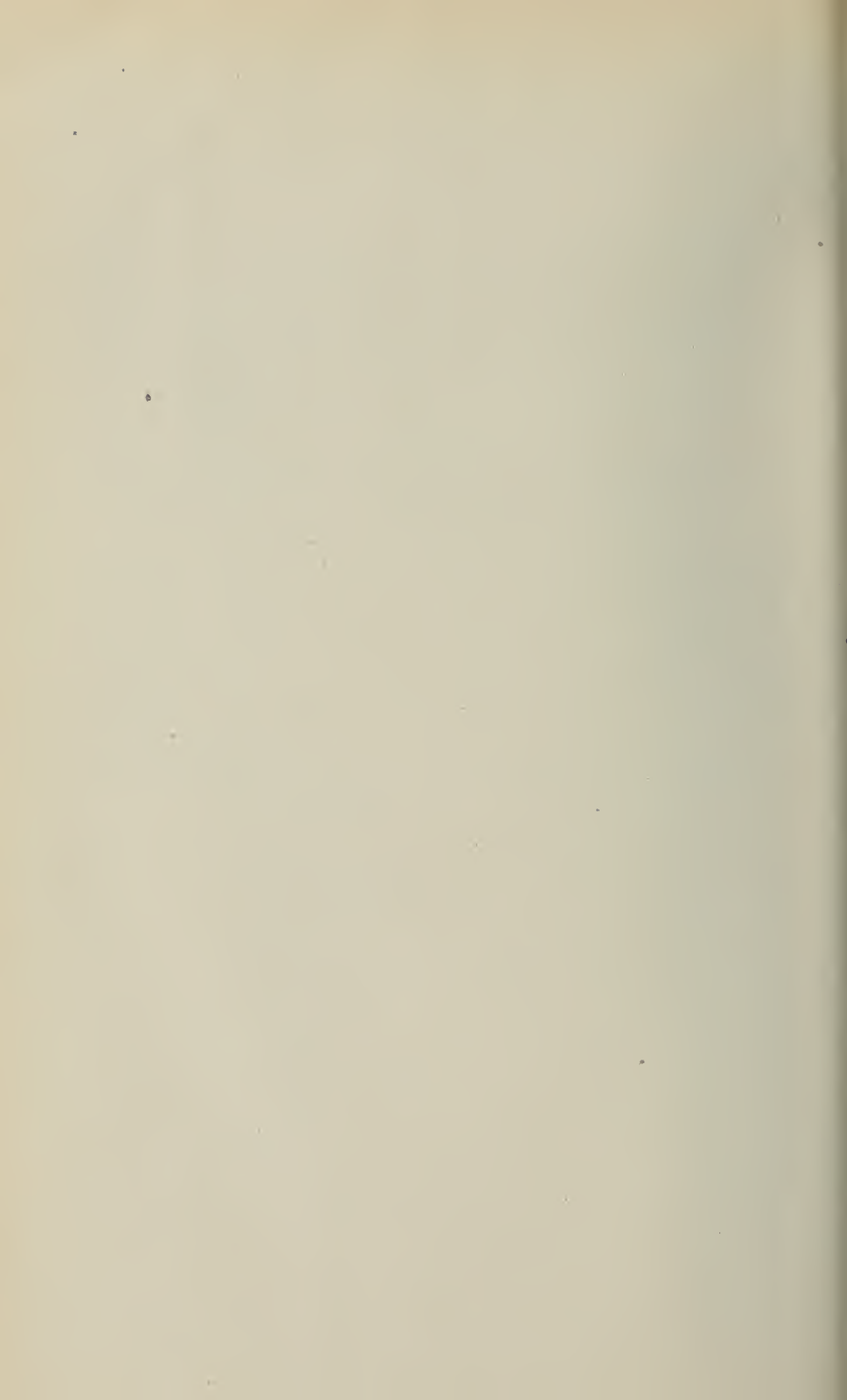


EXHIBIT C.

INVENTORY OF EQUIPMENTS OF THE PHYSICAL LABORATORY.

NOVEMBER, 1888.

EXHIBIT C.

INVENTORY OF EQUIPMENTS OF THE PHYSICAL LABORATORY.

CONDITION.	ARTICLE.	VALUE.
Good	1 test tube rack	\$ 30
..	12 test tubes	50
..	2 spirit lamps	75
..	3 flasks	75
..	4 beakers	40
..	5 glass jars	50
..	2 retorts	80
..	An assortment of glass tubing	3 00
..	Sheet copper, etc	1 00
..	Covered copper wire	1 05
..	Uncovered copper wire	1 20
..	1 cork cutter	1 20
..	1 cork presser	1 00
..	Gold leaf and tin foil	2 50
..	1 telescope	2 00
..	1 large air pump	40 00
..	4 air pump bell-jars	10 00
..	6 pounds of mercury	4 20
..	7 pounds of sulphuric acid C. P	1 50
..	3 pounds of nitric acid C. P	1 00
..	5 pounds of hydrochloric acid C. P	1 25
..	2 gallons of alcohol	1 75
..	5 pounds of sulphate of copper	1 75
..	Small assortment of chemicals	2 50
..	Small assortment of rubber tubing	1 00
..	1 convex mirror	1 00
Broken	1 concave mirror	1 00
Good	2 plain mirrors	1 00
..	1 Atwood's machine	4 75
..	1 frame for pulleys	1 50
..	1 small black-board	1 50
..	6 small iron balls for pendulums	25
..	1 large iron ball for pendulum	40
..	7 impact balls	30
Poor	Gasoline apparatus	3 00
..	1 large double convex lense, mounted	2 00
Good	1 spectroscope	60 00
..	1 mounted prism	1 50
..	1 unmounted prism	75
..	An assortment of lenses, etc	5 00
..	Newton's rings	50
Fair	1 model eye	3 00
Good	6 slides for magic lantern	50
Poor	1 magic lantern	10 00
Good	1 kaleidoscope	2 00
..	6 small reflecting mirrors	30
..	1 reflecting table	2 50
..	1 pair of large parabolic reflectors	8 00
..	2 stands for large parabolic reflectors	2 00
..	1 heliostat	2 00
..	Tourmaline tongs	75
..	Small balance	1 00
..	1 set of weights for small balance	1 00
..	1 large balance (hydrostatic)	3 00
..	1 platform scales (French)	12 00
..	1 common specific gravity apparatus	2 00
..	2 apparatus for showing Archimedes' prin	1 00
..	1 fine specific gravity balance with extra spring	12 00
..	1 specific gravity bottle	20
..	1 hydrometer	75
..	1 "guinea and feather" apparatus	5 00
..	1 inclined plane	1 00
..	1 Archimedes' screw	75
..	1 centrifugal machine with accessories	10 00
..	1 vessel for spouting liquids	3 00
Fair	1 set of Pascal's vases	2 00
Good	1 set of equilibrium tubes	75
..	1 maximum density apparatus	3 00
..	1 set of capillary tubes	50
..	1 Tantalus' cup	25

EXHIBIT C.—*Continued.*

CONDITION.	ARTICLE.	VALUE.
Good	2 graduates	\$ 60
..	1 radiometer	2 00
..	1 gyroscope	4 00
..	1 pair Magdeburg hemispheres	1 50
..	1 hollow sphere	1 00
..	2 graphite crucibles	60
Poor	1 pair of gas tanks	5 00
Good	2 barometer tubes	50
..	1 bent tube	40
..	1 eudiometer	1 50
..	1 Dalton's apparatus	25 00
..	1 small mortar	1 00
..	2 Franklin tubes	1 50
..	1 cryophorus	75
..	1 phosphorus basket	10
..	1 Davy safety lamp	1 50
..	1 wet and dry bulb thermometer	1 25
..	1 maximum thermometer	1 00
..	1 minimum thermometer	1 00
..	1 differential thermometer	1 75
..	1 common alcohol thermometer	75
..	1 fine F. thermometer	2 50
..	1 fine C. thermometer	2 50
Poor	1 pyrometer thermometer	1 00
Good	1 conductometer thermometer	2 00
..	2 brass balls and collars	1 50
..	1 Hero's engine	1 75
..	1 metallic box for radiation experiments	2 00
..	1 drying box	1 00
..	1 blow pipe	50
..	1 thermo-pile	30 00
..	1 glass force pump	3 00
..	1 Stavant's dented wheel	1 00
..	1 monochord	2 00
..	1 tuning fork	1 50
..	1 plate glass triangle for vibration experiments	75
..	1 plate glass square for vibration experiments	75
..	1 plate glass circle for vibration experiments	75
..	An assortment of small glass circles, ect., for vibration experiments	1 00
..	1 support for vibrating glasses	1 50
Poor	1 large bow	20
Good	1 Lissajon's sound apparatus	10 00
..	1 tin tube sound tube	1 00
Poor	1 large Holtz electric machine	3 00
Fair	1 Troepfer-Holtz electric machine	35 00
Good	1 magneto-electric machine	5 00
..	1 electric chime	1 75
..	1 electric see-saw	4 00
..	1 insulator conductor	4 00
..	1 pair of metallic plates for electric dancers	1 25
..	1 Leyden jar with movable coatings	2 00
..	2 Leyden jars	4 00
..	1 battery of Leyden jars	10 00
..	1 discharger	2 00
..	1 universal discharger	3 00
..	1 electric cannon	2 00
..	1 Gassiot's cascade	1 20
..	3 galvanic batteries	3 50
..	1 galvanometer	15 00
..	1 arc lamp	5 00
..	1 De la Rives ring	1 00
..	1 solenoid	50
..	2 electro-magnets	2 50
..	1 primary and secondary coil	5 00
Poor	3 Ruhmkorff indication coils	24 00
Good	3 Geissler's tubes	3 00
Not completed	1 dynamo machine	5 00
Fair	2 electric bells	2 50
..	1 telegraph instrument	5 00
Good	4 horse-shoe magnets	4 00
..	2 bar magnets	1 00
..	3 needles	25
..	1 Coalomb's balance	30 00

EXHIBIT C.—*Continued.*

CONDITION.	ARTICLE.	VALUE.
Poor	1 gold leaf electrometer.....	\$ 1 00
Good	1 sphere with removable cases.....	2 00
Poor	1 electrophere	50
Good	2 glass rods	30
..	1 stick of sealing wax.....	10
..	1 cat-skin	25
Poor	1 small electro-motor.....	75
Good	2 glass funnels	30
	Total.....	\$ 563 65

EXHIBIT D.
PRODUCTS OF THE SHOPS.
NOVEMBER, 1888.

EXHIBIT D.

PRODUCTS OF THE WORK-SHOPS.

WOOD-ROOM PRODUCTS.

Number	NAME OF ARTICLE.	Cost of Production.	Value of Article.
500	Exercises in wood work.....	\$ 150 00	\$
1	Rack	25	40
1	Rack for funnels	25	40
1	Hammer handle	05	10
1	Tube rack	60	1 00
1	Bottle holder	30	50
1	Bottle stand	60	1 00
2	Boxes	3 00	3 50
1	Stand for copper box	60	1 00
1	Case for papers	3 00	3 47
1	Repairing door	25	25
1	Case for papers	3 00	3 40
1	Book case	2 25	2 50
1	Bottle stand	65	75
2	Frames	1 50	2 00
1	Draft cupboard	37 00	41 50
2	Boxes	1 85	2 00
1	Making well curb	1 00	1 15
2	Pairs of steps	1 00	1 20
1	Gate	40	50
1	Bottle rack	2 00	2 00
1	Set of chalk racks	1 75	2 00
1	Privy	3 50	4 00
1	Writing desk	12 00	13 50
1	Pin stand	20	25
1	Pair of clubs	15	15
20	Brackets	1 20	1 40
1	Small table	1 20	1 35
1	Small table	2 50	2 50
1	Sign-board	1 50	2 00
3	Black-boards	9 00	9 00
1	Small book-case	50	59
1	Box	3 00	3 35
70	Brackets	3 20	3 50
1	Draft cupboard	47 00	47 00
	Shelves, etc.	10 00	10 50
20	Patterns	5 00	5 00
3	Lathe beds	15 00	15 00
27	Tables at \$2.25	55 00	60 75
	Making one fence	16 00	16 00
3	Round tables	9 00	10 50
1	Work stand	4 50	5 00
2	Work stands	13 00	14 00
35	Brackets	2 50	2 90
	Total wood-room products.....	\$ 425 75	\$ 298 70

MACHINE SHOP.

Number.	NAME OF ARTICLE.	Cost of Production.	Value of Article.
78	Iron bed steads	\$ 360 00	\$ 390 00
8	Mandrill	10 00	10 00
4	Angle irons	4 00	4 00
1	V-iron	2 00	2 00
	Screws and bolts for planer chuck	4 50	4 50
	Repairs on machines	12 00	12 00
1	Set of cutters	4 00	4 00
1	Pump rod	1 25	1 50
	Repairs on engine	4 50	5 00
2	Hammers	2 00	2 00
200	Exercises	200 00	
	Total metal-room products	\$ 602 25	\$ 435 00

FOUNDRY.

Number.	NAME OF ARTICLE.	Cost of Production.	Value of Article.
200	Castings for machine shop	\$ 30 00	\$ 30 00
4	Lathe legs	24 00	24 00
100	Exercises	90 00	
	Total foundry products	\$ 144 00	\$ 54 00

FORGE-ROOM.

Number.	NAME OF ARTICLE.	Cost of Production.	Value of Article.
400	Exercises	\$ 200 00	\$
4	Hammers	3 00	3 00
20	Lathe tools	20 00	20 00
	Tools repaired	25 00	25 00
	Total forge-room products	\$ 248 00	\$ 48 00

SUMMARY.

	Cost of Production.	Value.
Wood room	\$ 425 75	\$ 298 70
Machine shop	602 25	435 00
Foundry	144 00	54 00
Forge room	248 00	48 00
Total shop products	\$ 1420 00	\$ 835 70
Excess of cost of production over value of products	\$ 654 30	

The salable products of the shops are very small this year because everything was new, not well fitted up, and much of the time of the students has been employed in fitting up.

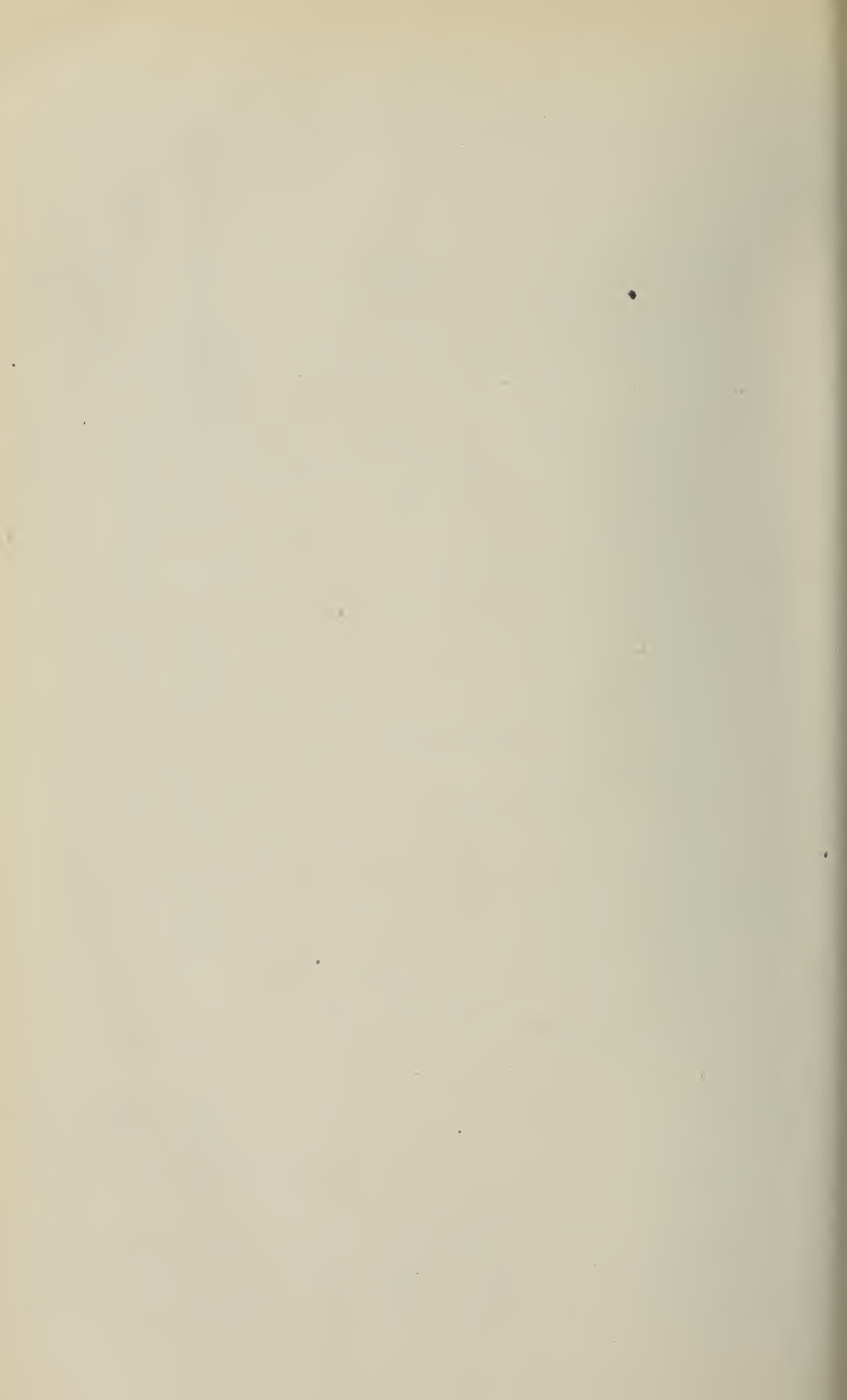


EXHIBIT E.

Exercises Given in Work-Shop.

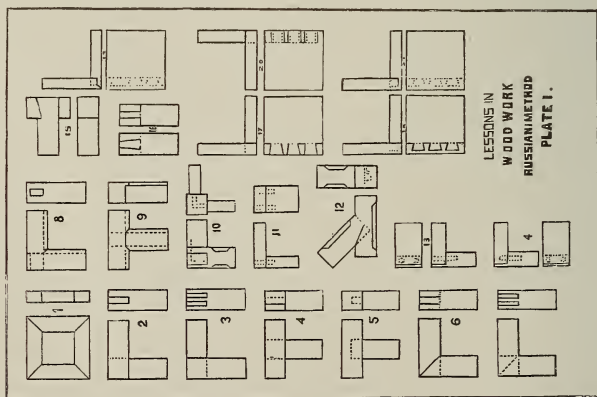
EXHIBIT E.

SHOWING THE COURSE OF EXERCISES GIVEN IN SHOP WORK.

Instruction in all the shops is given first by having the student perform a series of graded exercises, which illustrate the principles of the work in hand and familiarize him with the most common processes; after the completion of which, work of real utility and having a market value is undertaken and the student makes articles that are sold. The object in this is, not so much to make the shops a paying institution from a pecuniary view, as to give our students that practice which we believe to be the most beneficial to them.

WOOD ROOM.

The students are first taught the names, uses and care of the common bench tools for wood-working; then, by a series of graded exercises, shown in Plate 1, they learn the elemen-



tary principles of Carpentry and Joinery, and at the same time become more or less skillful in the uses of the tools. Our course of exercises consists of the joints most commonly used in carpentry and joinery, commencing with the simplest

and progressing through to the most difficult. As each joint is made the instructor tells where and when this is used in practical work, its value as compared with others, etc. After the exercise course is completed, the students make articles which have a market value, as tables, stands, brackets, etc., etc. We endeavor to make our instruction that which will be of the greatest benefit to our students regardless of any other considerations.

The Elementary Exercises in Carpentry and Joinery.

No. 1.—Square frame with joints. A stick of rough timber' is taken and made perfectly square and straight, which gives exercise in the use of the planes, square and marking gauge; then the mitres are laid off and sawed, the pieces fitted together and nailed, no glue being used. This gives exercise in the use of the saw and in laying out work.

No. 2.—Open Mortise-and-Tenon Joint. As in No. 1, first a stick has to be squared up, then two pieces of equal length are cut off, the mortise and tenon laid off and sawed and chiseled out. This gives exercise in the use of the saw, chisel and knife.

No. 3.—Double Open Mortise-and-Tenon Joint. The same as No. 2, only more difficult.

No. 4.—Common Mortise-and-Tenon Joint. In this the brace and bit has to be used in cutting the mortise. It is very similar to Nos. 2 and 3.

No. 5.—Blind Mortise-and-Tenon Joint. This differs from No. 4 only in that the mortise is cut but one-half way through.

No. 6.—Mitre Joint with Open Mortise-and-Tenon. This is a combination of Nos. 1 and 2.

No. 7.—Mitre Joint with Double Open Mortise-and-Tenon. This is a combination of Nos. 1 and 3.

No. 8.—Mitre Joint with Common Mortise-and-Tenon. This is a combination of Nos. 1 and 4.

No. 9.—Common Mortise-and-Tenon Joint with Mitre on Each Side. Same as No. 8 only more complicated.

No. 10.—Leg with Rails Mortised in at Right Angles. Only a complication of No. 5.

No. 11.—Dowel Joint. In this the process of doweling is first introduced and exercise is given in boring with small bits.

No. 12.—Blind Mortise-and-Tenon Joint at the end of a brace. This gives exercise in cutting angling mortises, and requires some nice sawing as well.

No. 13.—Half-Blind Dowel Joint. This is very similar to No. 11, but a little more difficult.

No. 14.—Blind Dowel Joint. Same as No. 13, except more difficult.

No. 15.—Half Dovetail Joint Halved Together. This is the simplest possible dovetail, and is intended as an introduction to this work. It is almost entirely a sawing exercise.

No. 16.—Dovetail Joint with Single Tongue. This is the second step in dovetailing, and is only slightly more difficult than No. 15.

No. 17.—Dovetail Joint with Several Tongues. This is only No. 16 repeated several times.

No. 18.—Half Blind Dovetail Joint. In this the female part of the dovetail has to be made entirely by chiseling, and it furnishes very good exercise in this work.

No. 19.—Blind Dovetail Joint. This is a very difficult joint to make well, and it requires very fine sawing and chiseling.

No. 20.—Blind Dovetail Joint Without Mitre. This is quite similar to No. 19. The sawing is not so difficult, but the chiseling is just the same.

It is thought that this course gives the student a fair knowledge of the principles of wood-working by hand tools, and now he passes to the

TURNING LATHES,

At which he is instructed in a systematic and thorough manner. We have no drawing of these exercises, because no two students ever go through exactly the same course, though they all have work which illustrates the same principles and cultivates the same skill.

After these elementary exercises have been completed, the students spend eighteen weeks in making articles which have

a marketable value. In the construction of these articles, students handle the machines freely and do all the work which would be required of them in a regular manufacturing establishment.

PATTERN MAKING.

One term of the freshman year is spent at this work, after twelve weeks have been spent in the foundry, so that the student knows the requirements of a good pattern. In this course the exercises are governed in a great degree by the needs of the foundry.

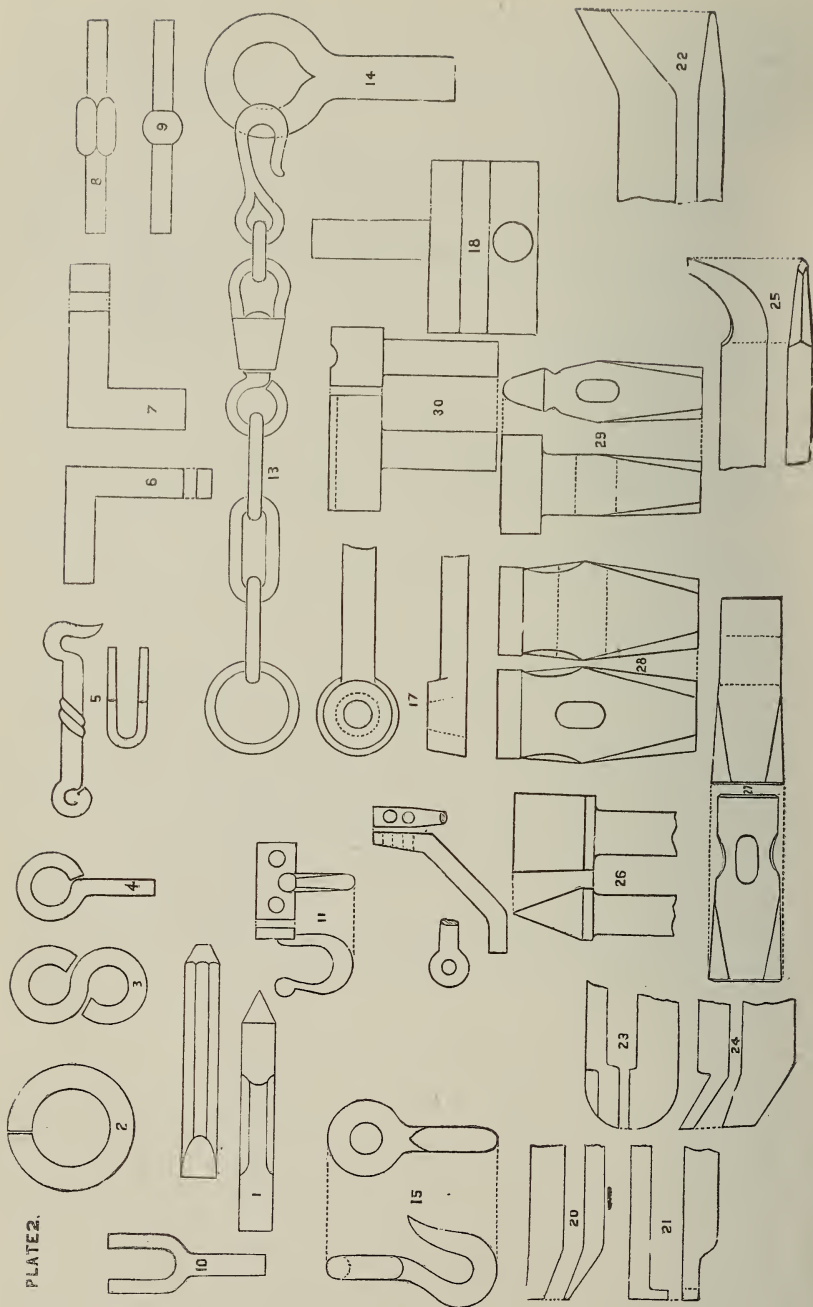
FORGE ROOM.

When a student enters this shop he is first shown the equipments, and the name and uses of each tool are explained.

The instruction in this room is given by a graded course of exercises shown in Plate 2, after the completion of which the classes make finished articles, as tools, scroll-work gates, wrought iron fences, etc., etc.

Free use is made of the blackboard, sketches being made to show the stock in each stage of working. Also the instructor performs each exercise before the class, showing every step in the working, and calling attention to any point of particular interest or any difficult manipulation. Many of the more difficult, and all the first exercises are performed in lead before heated iron is tried, thus saving much material which would undoubtedly be spoiled if the student attempted to manipulate hot iron before he was thoroughly familiar with the work in hand.

PLATE 2.



No. 1.—This exercise is to give practice in the use of the hammer and methods of holding the piece. It is made of one-half inch square stock two and one-half inches long. At the left end it is drawn down to three-eighths square, the center is three-eighths octagon, the right end is three-eighths round and pointed.

No. 2.—*Bending* in a curve of uniform curvature. The stock is five-eighths of an inch round iron and seven inches long.

No. 3.—*Figure Eight*, consisting of two rings of uniform curvature, one and one-half inches in diameter, made of three-eighths inch round iron. The student is required to calculate the length of the stock for this exercise.

No. 4.—*Ring and Handle* of three-eighths inch round iron, the ring is one inch inside diameter and handle two inches long.

No. 5.—*Hasp and Staple* of one-quarter inch round iron. The center of the hasp is upset and squared to one-quarter inch, then twisted. At the ends of the square part shoulders are formed, so that the one-quarter inch round is flush with the flat surface of the one-quarter inch square part. The staple is also of one-quarter inch round, and is drawn to sharp, wedge-shaped points at each end.

No. 6.—*Square Bend*. The middle is upset so that when bent a square corner will be made. The stock is one-half inch square.

No. 7.—*Edge Bend*. The same as No. 6, only more difficult. In these two exercises much care is required to avoid injuring the metal in bending. By this exercise the student is taught the necessity of avoiding square bends in building construction.

No. 8.—*Upset Square*, made of three-quarter inch round iron, and upset so as to make a three-quarter inch square at center for a distance of one and one-half inches, the ends are drawn down to one-half inch round.

No. 9.—*Fuller Piece*, made of one inch by one-half inch bar iron. The center is left one-half inch thick and one inch in diameter. The ends are drawn down to one-half inch round.

No. 10.—Forged Fork, made of one inch by one-half inch bar iron. The shank is one-half inch round. This is a fine exercise in splitting, fullering, drawing and finishing. Later on this exercise is repeated by welding two pieces of round iron.

No. 11.—Hook Hanger, made of one inch by one-half inch bar iron and one-quarter inch round iron. The hook is riveted in.

No. 12.—Bent Brace of one-half inch round iron, made for a particular duty.

No. 13.—Log Chain with hook on one end, ring on the other and swivel in the center. The hook is first made of one inch by three-eighths inch iron. Next the ring of three-eighths inch round is bent and lap welded. Now the links are made, each one being welded into the chain as it is made. The two parts of the chain are connected by a swivel, which is made of one inch by one inch iron. Each end is drawn down to three-eighths inch round, leaving a shoulder on three sides. The shank is then drawn into a slightly tapering conical shape, whose axis is perpendicular to the ends. A three-eighths inch hole is now punched along the axis of this cone, the two three-eighths inch round ends are bent, hooked into the chain and welded. Next the eye, which is a piece of three-eighths inch round iron with head on one end, is put through the hole in the shank and bent into a ring which hooks into the other half of the chain.

The student has, before this, had practice in the different kinds of welding.

No. 14.—Welded Eye, made of three-quarter inch round iron, ring part is drawn down to three-eighths inch, bent and welded.

No. 15.—Chain Hook, of five-eighths inch round iron, is upset in two parts and drawn down in all others. The eye is lap welded.

No. 16.—Blacksmith's Tongs, of one inch by one inch bar iron. The jaws are one-half inch by one inch, with a half round groove, one-half inch in diameter. The handles are

seven-sixteenths inch at the end, with a taper to one-quarter inch round at the foot. Other dimensions are given by the instructor.

No. 17.—Heading Tool, made of three-quarter inch round iron. The head is formed by upsetting, bending at right angles and flattening. The hole is then punched and the top face of the head case hardened.

No. 18.—Butt Weld, made of one-half inch round and one by one-half inch bar iron. The two pieces are welded by setting the round piece on the flat and striking a light blow, both pieces being at a welding heat. The exercise is finished by the aid of a heading tool.

No. 19.—Cold Chisel of seven-eighths inch octagon steel. After making the chisel to conform to the dimensions, the student tempers it for different kinds of work.

At this point in the course a lecture is given on tempering.

Now the student is prepared to work steel, and the following tools are made :

No. 20.—Threading Tool of seven-eighths inch by one-half inch tool steel.

No. 21.—Boring Tool of seven-eighths inch by one-half inch tool steel.

No. 22.—Round Nose Tool of seven-eighths inch by one-half inch tool steel.

No. 23.—Side Tool of seven eighths inch by one-half inch tool steel.

No. 24.—Parting Tool of seven-eighths inch by one-half inch tool steel.

No. 25.—Diamond Point Tool of seven-eighths inch by one-half inch tool steel.

No. 26.—Hardy.

No. 27.—Flatter.

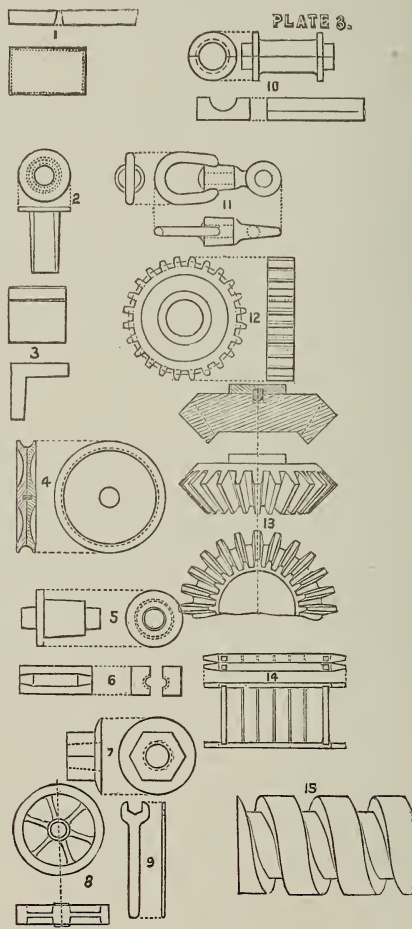
No. 28.—Set Hammer.

No. 29.—Fuller.

No. 30.—Bottom Swage.

COURSE IN FOUNDRY.

The instruction in the foundry as in all the other departments of the shops is given by a graded course of exercises which familiarize the student with the principles and methods of this work. On Plate 3 are shown a set of these exercises; but these are varied greatly, no two students doing just the



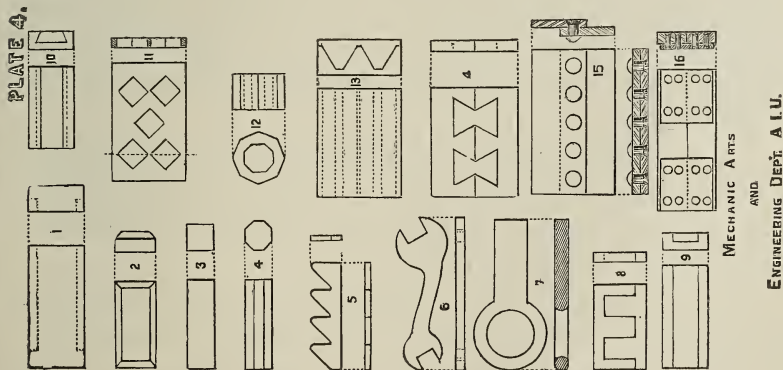
same work. It will be observed that the first exercise is the moulding of a rectangular block which has plenty of "draw" and the last is the moulding of a square thread screw—the first is the easiest of all objects to mould while the last is

among the most difficult. Between these two extremes the exercises are graded.

Most of these exercises are cast in type metal or brass, while some of the larger ones are cast in iron. This systematic course which extends over twenty weeks is completed in the sub-freshman year. During the freshman year the students spend thirteen weeks at practical foundry work, moulding and casting whatever is needed in the machine shop or other places. No description of the exercises is given, because, as stated, no two students do just the same work.

METAL ROOM.

Bench Work.—In this room the students are given instruction in bench and machine work. The catalogue requires that the students should enter this room with the freshman year. One half of this year is spent at the bench. During this time the students are taught, by means of a series of graded exercises as shown in Plate 4, the practical use of all the bench tools, their names and how they should be cared for. They are taught to work from drawings, as well as models from which they take their own measurements. In these exercises they are made familiar with the principal metals of manufacture and are taught the manner and methods used for working each. Special attention is paid to the methods of laying out work.



No. 1.—Chipping Exercise. The object of this is to secure by the use of the chisels an approximately plane surface. The

student is given a block of cast iron, as is shown in 1 of Plate 4, and is told how to make the guiding lines, how the chisel should be ground (having learned in the forge room how it should be tempered), how the chisel should be held, how the hammer should be held, and where to begin and end so that the best results may be obtained.

No. 2.—Chipping, Filing and Polishing. The object is to make a chamber around the top face of a given rectangular block and smooth and polish the top face, ends and sides. In this exercise the work is more difficult to hold firmly in the vise, and, after the chisel has been used, the file is taken to true the faces of the bevel and bring them to lines, which have been laid off the proper distance from the edges. Then the planer marks should be filed out and the whole polished with emery cloth.

No. 3.—Finishing Exercise. This is an exercise showing the different kinds of finish given a metal. A block, as in 3, planed all over, is to be finished, on one side with a file, on another with a hand scraper, on another with emery and oil, and the fourth side is to be finished with dry emery. The ends are left as they are planed.

No. 4.—Filing Exercise. To make an octagonal prism from the square. Taking a block as in No. 3, lay off the corners of octagon on the faces of square. Chip off the greater part of the edges, and file to the marks. Then, using a protractor, file the faces to the proper angle with each other, making the same distance between opposite faces by using the caliper square.

No. 5.—Filing Exercise. Illustrating the use of a template in filing curved or irregular pieces. A piece of similar shape to 5 is taken; to this is fastened the template, and then the piece is filed to size and shape.

No. 6.—Filing Exercise. Practice in outlining without template and filing a square corner and opening to dimensions. Taking a casting of similar outline to that given in 6, with edges square, to smooth up, round the edges, and file the opening to given dimensions, fitting it to a bolt-head of that

size. In case the student has not been successful in polishing, additional exercise may be given here.

No. 7.—Shaping Exercise by File. Use of template again in gauging the regularity of the ring. Given a ring and handle as shown, with ring of a square section, to file the ring to a circular section.

No. 8.—Fitting Exercise. Making an interchangeable fit. Take two alternate shaped pieces of brass and iron; lay off, by means of try square, scribing awl and scale, then file and scrape until the pieces fit nicely when put together either way.

No. 9.—Fitting Exercise. Fitting rectangular piece into a channel. Given a piece with channel planed, to fit, by use of file and scraper.

No. 10.—Fitting Exercise. Fitting a piece into a dove-tail channel. Given piece with dove-tail channel planed, to fit piece into this, to work properly. The same tools are used for this as in No. 9, except that the protractor is used instead of square.

No. 11.—Measuring and Marking-Off Exercise. This gives exercise in making accurate measurements and marks, and filing and drilling to these marks. Given block of iron, as shown, to lay off points at given places, drill and file the holes at exact given distance apart and from the edges.

No. 12.—Fitting Exercise. To fit octagonal ring with round hole to block left from No. 4. To lay off and file to fit. This, it will be noticed, is more difficult than those preceding.

No. 13.—Scraping Fit Exercise. To fit V-ways from the planed stock. Taking two blocks planed to fit approximately, to make an exact fit by means of a hand scraper.

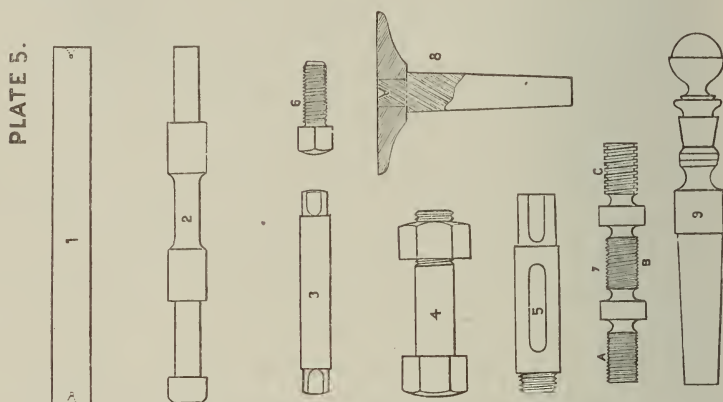
No. 14.—Joining Exercise. To fasten two pieces together by means of a dove-tail piece inserted in the edges. To lay off, cut out and fit the dove-tailed pieces in, so that they will hold the pieces firmly together.

No. 15.—Joining Exercise. To join two pieces by lapping the edge of one over the other and riveting. To lay off the holes, drill, countersink and rivet.

No. 16.—Joining Exercise. Fastening or joining two pieces together by placing the edges against each other and riveting straps on the back. Given the pieces, straps and rivets to lay off, drill, countersink, and rivet the straps on.

METAL WORK.

Machine—In this, as well as other branches of the shop-instruction, the student is taught by means of a series of graded exercises :



No. 1.—Straight Turning Exercise. Requires centering, center drilling and countersinking, squaring ends and turning.

No. 2.—Digging-Out Exercise. A repetition of No. 1, then digging out for bearings.

No. 3.—Taper Turning Exercise. Making the proper taper for a mandrel.

No. 4. Thread and Milling Exercise. Making a standard hexagonal-headed bolt.

No. 5.—Thread and Milling Exercise. To make a standard nut arbor.

No. 6.—Threading Exercise. Making a standard steel set screw.

No. 7.—Threading Exercise. Cutting V., U. S., Square and Whitworth standard threads.

No. 8.—Boring and Shrinking Exercise. Making face-plate center by shrinking cast-iron washer on steel mandrel,

No. 9.—Irregular Turning Exercise. Turning to template.

No. 10.—Eccentric Exercise. Laying off, centering and turning a double eccentric.

REPORT ON A PROPOSED WATER SUPPLY,

ENGINEERING DEPARTMENT,
ARKANSAS INDUSTRIAL UNIVERSITY,
FAYETTEVILLE, ARK., November 26, 1888. }

To Dr. W. B. Welch, Chairman of the Water Committee, Board of Trustees :

SIR: In obedience to your verbal order of September 1, 1888, I beg leave to submit the following report on a proposed water supply for the Arkansas Industrial University :

SOURCES OF SUPPLY.

The Lewis spring, located near the depot of the St. Louis and San Francisco railroad, is 2500 feet distant, and about 100 feet below the University hill, and yields 26,000 gallons per twenty-four hours. The railroad company has the first lien on this spring, and, since it receives the drainage from about one-half the town of Fayetteville, and two or three cases of typhoid fever have already been traced to its water, it is not recommended as a source of water supply for the University.

The only other spring of any size near the Arkansas Industrial University is Williams', distant about 3800 feet, and 110 feet below. The yield from this spring is 8000 gallons per twenty-four hours during ordinary seasons. Since this spring runs dry during certain years, it is not considered an available source of supply. There is no spring nearer than Johnson's, which is six and one-half miles distant, that I would recommend as an available source. The cost of a supply from this source being over \$5000 it is not considered or recommended. As there is but little probability of a subterranean supply being available, I am compelled to recommend a cistern scheme.

The yearly rainfall in this latitude is about twenty-four inches during the driest seasons, the larger amount falling during the months of March, April and May, with but little during the months of July, August and September. The heaviest rainfall rarely exceeds five inches. This, if caught in

cisterns, will give 64,515 gallons from the roof of the main building, and 24,310 from the roof of the dormitory, making a total of 88,825 gallons from both buildings. On account of the heavy rainfalls in the spring time, it is safe to assume that cisterns having double this total capacity will be full at the beginning of the dry season.

CISTERN WATER SUPPLY.

I therefore recommend that the boilers in the main building be removed to a separate building to be constructed at the position indicated in the accompanying plat, of a size 30x50 feet. This will contain the boilers, pump, ladder wagon and hose carriages necessary for an ample fire protection. The boilers will still furnish steam for the heating of the main building, and, on account of their position and the fire protection afforded, will reduce the cost of insuring all the buildings of the University about 60 per cent. The old cistern, capacity 10,098 gallons, will be utilized, and two new cisterns 14 feet wide, 14 feet deep and 40 feet long, with semi-circular ends, should be constructed to accommodate the rain-fall from the main building. These latter cisterns will be constructed with a wooden cover. The two dormitory cisterns will each be 17.5 feet in diameter and 14 feet deep and similarly covered. The fire service should be sufficient to discharge over the top of the main building 205 gallons per minute through a hose 200 feet long with a one-inch nozzle. A tank 12 feet in diameter, 10 feet in height and having a capacity of 8452 gallons, constructed in the north tower of the main building, will supply the hose stream for forty minutes, or until the pumps may be put into operation. The fireman should live on the University premises near the pump house, and thus be ready to answer the fire signal. He should always have banked fires and hot water in his boilers so that the pump may be put into operation within twenty minutes, or before all the water from the tower tank has been used. This scheme will answer not only for the other University buildings but also for the main building; since, if it were on fire, the pipes leading to the water

tank would not be damaged by the heat before the pumps could be put into operation. A small filter should be used for purifying the water supplied to the buildings. This would be thrown out of service in case of fire. The daily water consumption is estimated to be as follows :

For dormitory uses, gallons per 24 hours	1500
For stock uses, gallons per 24 hours	1000
For boiler uses, gallons per 24 hours	2200
For laboratory uses, gallons per 24 hours	500

Total gallons per 24 hours.....	5200
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The capacity of the five cisterns being 167,550 gallons, they will afford a supply of water for thirty-two days, provided no fire occurs in the meantime. This, I think, will be sufficient for all present and future demands of the University. In case it is proven otherwise the problem will be completely solved by the construction of still other cisterns.

The following is an estimate of the quantities and cost of construction of the proposed water supply :

1755 feet, 6 inch cast iron pipe, making 33½ tons.....	\$1,340 00
1400 feet, 4 inch cast iron pipe, making 16.7 tons.....	668 00
1000 feet, 3 inch wrought iron pipe (galvanized), for main building and dormitory fire distribution system on floors.....	650 00
9 4-inch hydrants, \$35 each	315 00
21 stop valves, various sizes, \$30 each	630 00
17 special castings, making 1½ tons.....	100 00
620 cubic yards excavation and back filling	155 00
1.25 tons of lead for pipe joints.....	30 00
4 cisterns, complete	1,600 00
1 reducing valve for heaters	80 00
1 pump, steam cylinder 12x10, water cylinder 6x10, duplex brass rods, etc	575 00
1 brick boiler-house 30x50 feet with wrought iron chimney.....	700 00
Cost of removing boilers to pump-house	400 00
1 hook-and-ladder wagon, with buckets.....	200 00

2 hose carriages, with 200 feet of hose for each	625 00
700 feet of hose for floors of buildings.....	490 00
40 fire buckets for floors of buildings.....	90 00
1 filter, capacity 1000 gallons per hour.....	330 00
1 wooden tank, 12 feet diameter, 10 feet high	90 00
Miscellaneous and contingent expenses.....	400 00

Total cost, including construction \$9,468 00

The above estimate includes the total cost of the proposed water supply. Some of the items enumerated should strictly be charged to the heating of the main building. The scheme as proposed is the result of a great many days of study, and much field work in surveying, and is believed to be the most feasible solution of the problem before us.

Respectfully submitted,

J. M. WHITHAM,
Professor of Engineering.

REPORT
OF THE
AGRICULTURAL DEPARTMENT.

President E. H. Murfee, L. L. D.

SIR: I herewith respectfully submit the report of my department,

ALBERT E. MENKE,
Superintendent.

INAUGURATION.

The need of a higher and more thorough course of instruction in agriculture at this University was recognized by the members of the last Legislature and resulted in what is known as the "Barker Bill." It is time we admit that a man cannot farm and make money in these days of sharp competition if he adheres to the methods of his greatgrandfather. He is bound to march on with the age of progress or he will surely fail. We constantly hear the cry that boys are leaving the farm and going to the large cities to become clerks in the stores. Why is this? Men do not act without a reason. There must surely be something distasteful about their fathers' occupation to induce this change. The fault lies usually in the fact that many of them see at home nothing but a hand-to-mouth existence. Their parents inform them that farming is a poor business, and so it goes. They complain of the hardness of the times and the scarcity money, but never dream that it is their own methods that cause the money to become scarcer and the times harder. Men are slow to admit their own faults and a man who has practiced a certain method of working for years is chary to concede that he

was at fault. If a neighbor, who has succeeded with a better plan, comes and suggests it to him, he is very liable to adopt it; but if this same neighbor should happen to write his idea to some agricultural paper and the aforementioned unfortunate should happen to read it, nine times out of ten he would sneer about book farming and pay no attention. It is a curious thing with what distrust the old-fashioned, non-progressive farmers regard newspapers and books: they seem to think anything that is in them is mere theory and that all farmers who write for the agricultural press are not fit for anything else. In fact, to such a ridiculous degree of suspicion do some of them carry the idea, it is almost conceivable that some of the most antiquated of the clogs on the wheels of progress would not believe his own experience if he saw it in print. It is a good thing for Arkansas that the farmers of the last Legislature were not imbued with these primitive notions. They saw the position and recognized the need; hence the result. The liberal appropriation of eight thousand dollars was made to put the Agricultural Department in working order.

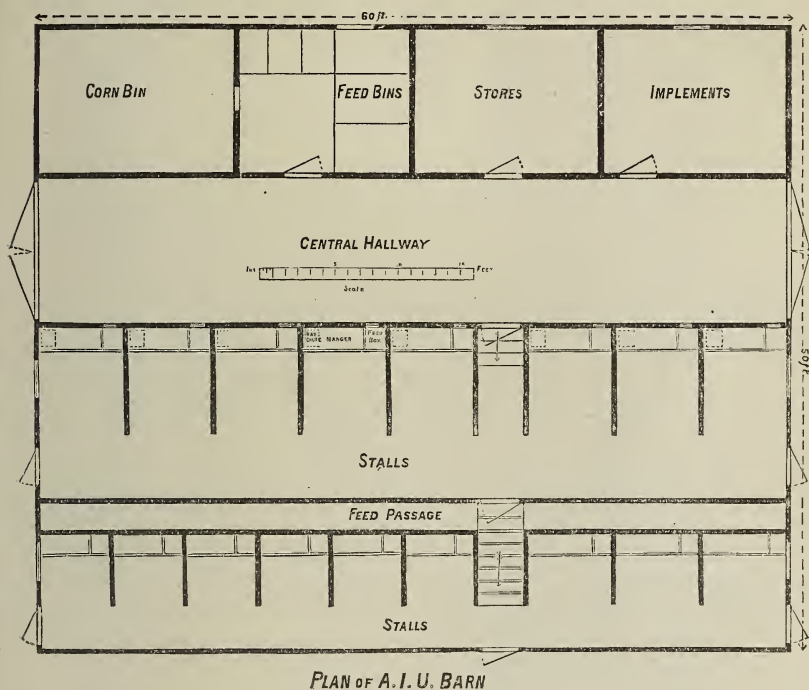
CONDITION OF FARM.

My term of office commenced September 1, 1887. At that time the farm consisted of about three acres of land in cultivation and three acres in orchard. This piece only was fenced. The timber had been cut on forty acres. Part of a stone wall separating this last piece from the rest of the farm had been built. I also found a pair of antedeluvian mules and a tumble-down shed.

PRELIMINARY WORK ON FARM.

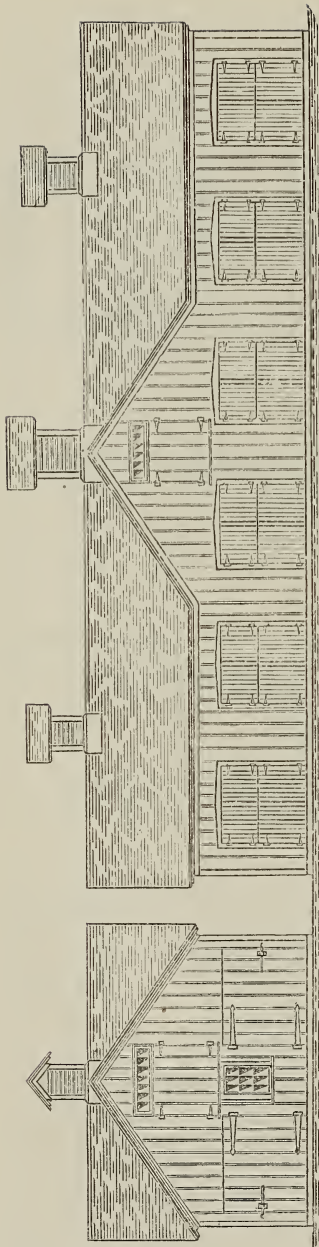
The first work we did was to grub the cleared land. This was principally accomplished with the aid of dynamite: we found it saved both time and money. We then proceeded to fence our land. Half of the rail fence previously alluded to was rotten; we tore this down and replaced it by a substantial board-and-wire. The rest of the farm was fenced as rapidly as possible and in a short time we had an unbroken string. The stone wall was also completed. We now built our large barn;

it is of the dimensions as per plan, fifteen feet to the inch. We find it extremely convenient and commodious. It furnishes stabling for seventeen head of stock and the mow will hold thirty tons of hay.



CROPS.

In the fall of 1887 we put three acres of our cultivated land in wheat, which averaged twenty-seven bushels to the acre. In the spring of 1888 the new ground was used for corn, potatoes and mangolds. We had several varieties of corn and potatoes, some of the former running up to fifty odd bushels to the acre and the latter to two hundred and seventy-eight: the mangolds ran as high as ten tons. The methods we employed for the cultivation of our wheat were described in Bulletin No. 6, the methods we adopted for the other crops will shortly be published and circulated. There was nothing mysterious about our good results; we only cultivated the land thoroughly and did not let the weeds grow. The extremely high result on potatoes was due to fertilizing, but the other crops were unfertil-



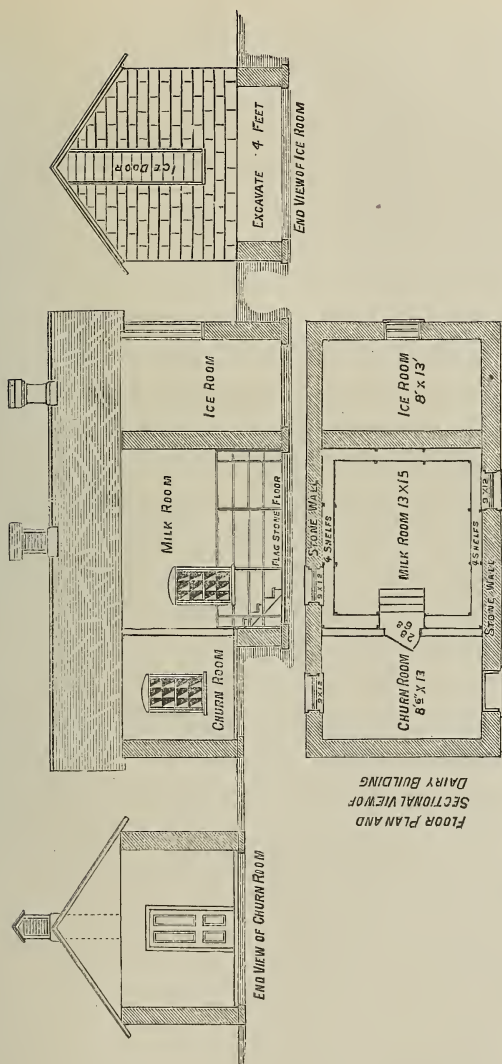
ized on those portions from which the averages are calculated. This fall we noticed indications of chinch bug, we have therefore turned last year's wheat ground into grass and sown wheat where we had corn. We had intended a different rotation from this, but the warning changed our plan. In the spring of 1888 we continued our building operations and erected a large cattle barn and a convenient dairy.

The barn will accomodate twenty-four head of cattle, is easy to keep clean and has the paramount advantage of being easy to build at a low cost.

The construction of the dairy is evident from the plan: one feature worthy of notice is the ease with which we can get the air cooled in the hottest weather by a ventilating pipe that passes through the ice room.

The reason we are running so much to cattle is because I am a strong believer in the profits to be obtained by handling good stock. I have before me a copy of this week's (Nov.10) Breeder's Gazettee. Choice steers are quoted at \$6.25 to \$6.50 per 100 pounds; common \$1.25 to \$2.25. We wish to educate the student's eye in the telling points of good stock. We desire to show him

that a good animal eats no more than a scrub, and to let him see the pecuniary advantages to be gained. Moreover, we are believers in the efficacy of barnyard manure as a means of



restoring fertility and increasing the yield of crops; hence, the necessity for stock. The University herd has been shown at the Fairs this fall with gratifying success. At Springfield, Mo., we took eleven first premiums, to-wit :

Hereford bull, any age.....	First prize.
Hereford cow, any age.....	First prize.
Hereford bull, under two years.....	First prize.

Hereford heifer, under two years.....	First prize.
Holstein bull, under two years	First prize.
Holstein cow, three years and under four.....	First prize.
Holstein cow, two years and under three	First prize.
Holstein cow, one year and under two.....	First prize.
Holstein herd, one bull and four cows	First prize.
Holstein cow, sweepstakes, any age	First prize.
Sweepstakes for best heifer, any age or breed.....	First prize.

We won these prizes with seven animals, competing with herds from Kansas and Missouri. We beat the celebrated cow, Flora Clifden, with our imported cow, Millicent. Our Holstein heifer, Arkansas Princess, bred by us, won the big sweepstakes against all comers.

We showed the herd at Fort Smith, Ark. later in the season at the Western Arkansas Fair. We won twelve first premiums, the majority of which were walk-overs. The triumph that we are proud of was the Springfield victory, for it showed people out of the State that Arkansas can show as good a selection of stock as her neighbors. This feature of improving the stock interests of the State is, in my opinion, one of the utmost importance. The value of its live stock has been the making of Illinois, and it should be an encouraged industry in Arkansas. We intend, as soon as practicable, to hold yearly sales of fine stock at the University, and in this way they will become disseminated throughout the State. We have no axes to grind, nor any favoritism for a particular breed; all will have their merits presented and their defects pointed out. Not only will we do good in that direction, but it will be a means of bringing the farmers of the State into closer relationship with the University; it will afford them an opportunity for gaining an insight into our workings, an inspection of the latest methods and most economic principles at the agricultural colleges. In Mississippi, Iowa, Michigan, Kansas and Ontario, the live-stock sales are annually a feature of the greatest interest to the agriculturists of those regions, who regard the process of sales that I have heretofore described as one of transcendent advantage to all parties concerned.

NEEDS.

An inspection of the plan of our farm will show how we are handicapped. We have fifteen acres of poor land for grazing purposes; the remainder of our woodland is so extremely rocky that even if it were cleared the result would be unprofitable. We have twenty-five acres of land in mixed crops; it is therefore an absolute necessity that our area be increased. An agricultural college that truly aspires to be an agricultural college, with an available farm of fifty acres is an anomaly. All the other successful agricultural colleges in the country have farms of from three to nine hundred acres. If this department is to be supported and fostered, now is the time to aid it. Arkansas needs good stock, needs improved methods, and needs channels for the dissemination of this information. This is the best place to utilize for these purposes; I therefore trust that the imperative necessity of additional farm land may be self-evident. Another difficulty that we have to contend with is want of water. We bored a well two hundred and seventy-eight feet deep only to meet with disappointment instead of water. We cannot afford to haul water, and cisterns at best are uncertain. Our stock are increasing in numbers, and the interest that the people of the State are taking in the welfare of the herd, leads me once more to the point of more grass land. Without it we shall fail to carry out our ideas of what is for the best, and with it we shall succeed. The fruits of our success will revert to the State at large through the education of its sons and the increased value of its stock.

DAIRY.

The great prosperity of the farmers in many of the Northern States is due to their paying careful attention to methods in dairying. We have built a first class dairy and need a Laval separator. It is no use trying to do without apparatus. This is a school of instruction; we are bound in honor to show the most modern and most economic labor saving machinery. We cannot run the farm on narrow principles and do justice to our students; it is bound to be conducted differently from an ordi-

nary fifty-acre place; we have to show every kind of machinery and its use. We have to show every mode of culture, and all things that a man may need when he starts out for himself, be his place large or small. You must remember, sir, that we have had as many as sixty-seven students at work on the farm, and in order to interest and instruct that number the occupation has to be greatly diversified. Hence the necessity for material in plenty to work with. I trust, sir, that the needs I have stated may seem sufficiently urgent to you to warrant asking for an appropriation for this department.

MACHINERY, ETC.

Amongst the new machinery the following seem to me to be worthy of mention :

The Victor Manure Spreader.—This is a most useful machine; it comprises an ordinary wagon bed with an arrangement attached, by means of which the barnyard manure is gradually pushed out of the cart; at this point it comes in contact with a revolving fork which scatters it uniformly and well. We find it a very desirable machine.

Buckeye Rear Pressure Shoe Drill.—This drill is well suited for our soil, it would not, however, work well in an ordinary clay, at least that is my opinion, and I think a hoe drill would be better suited for such places; but as far as our farm is concerned it works splendidly. The soil is sandy. The seeding is regular, the furrows well covered, and the yield always better than broadcasting.

True Blue Plow.—This plow is made at South Bend, Ind. I like it; for it does most excellent work.

Studebaker Wagon.—We purchased one of these wagons; it is, however, too well known to call for any description.

Platform Wagon Scales.—We use the Jones scales made at Binghampton, New York. So far we have not had any trouble with them, and it looks as if they would be a success. We use our scales constantly. All our stock have to be weighed at least once, and many of them twice a week. We can tell better in this way what they are doing, as we believe a man

cannot weigh too often. It does not pay to keep unthrifty cattle and we don't propose to do it.

This department has also improved the campus by building a stone walk. The walk is one thousand feet long and six feet wide. It was a necessary addition.

STUDENTS.

We opened the term of September, 1887, with one student in the Agricultural Course. Our numbers have increased gradually. September, 1888, we opened with 47 students in our course—young men, who, for the most part, intend either to farm for themselves, or manage a place for some one else. The increase in interest and attendance is very gratifying.

DEGREES.

I have noticed occasional wails in the newspapers to the effect that we do not have any graduates in the Agricultural Course. The reason is patent. We have had an Agricultural Course for about a year, and it is hardly possible for youths to complete a four years' *College Course* in that time. I would respectfully suggest that the Short Agricultural Course be put on a par with the course for Licentiate of Instruction. Both courses run to the end of the sophomore year. At the end of that time the normal student receives a diploma, and since diplomas seem to be considered a criterion of success, it would be as well if the agricultural student received one also; he has done as much work in his line as the normal student; the public at large seem to think it desirable, the newspapers ask for the number of graduates, and no other explanation is accepted. I, therefore, most respectfully urge that a diploma, but not a degree, be given in the short course; the long course to remain as heretofore.

CHEMICAL DEPARTMENT.

The work in the Chemical Department has been reorganized and increased. We have enlarged our laboratory space considerably. We now have two laboratories for qualitative analysis, and one for quantitative. We think that practical

work is the best way to acquire a knowledge of the science, and have therefore increased our space to provide for it. We put in a Springfield gas machine, as we found it impossible to do work in the laboratory, in a workmanlike manner, with spirit lamps. The machine works well and gives perfect satisfaction. Our supply of apparatus has been largely augmented and modernized to meet the wants of an increased number of students. We propose to keep up with the day, and new apparatus is from time to time absolutely necessary. A laboratory takes money to run it; students use up chemicals; apparatus has to be renewed, and with the large attendance we have had the quantity of substances used is surprising. It will, therefore, be necessary to make an appropriation for the running expenses of the laboratory.

COURSE IN CHEMISTRY.

I respectfully suggest that I be allowed to draw up a course of instruction in Chemistry that will enable us to produce chemists who will be competent to take positions, and aid in the development of the State. This is a scientific institution, and such a profession ought to have representative students. In all other large agricultural colleges the course in Chemistry is recognized as the peer of others, and the demand for competent chemists is in excess of the supply. I would suggest a four years' college course leading to the degree of B. S.

The classes in the Chemical department have been instructed in elementary chemistry, inorganic chemistry, organic chemistry, qualitative and quantitative analysis, mineralogy and assaying.

ESTIMATED APPROPRIATION 1889-90.

Laboratory.....	\$1000
Machinery and Dairy Output, etc.....	3000
A Farm.....	

AGRICULTURAL EXPERIMENTAL STATIONS.

The Agricultural Experimental Stations of the Arkansas Industrial University were established February 17, 1888, at

Newport, Texarkana, Fayetteville and Pine Bluff, with the following officers in charge :

A. E. Menke, Director.

F. W. Simonds, Biologist.

W. Trelease, Consulting Botanist.

S. S. Twombly, Chemist.

E. S. Richman, Horticulturist.

R. R. Dinwiddie, Veterinarian.

C. W. Woodworth, Entomologist.

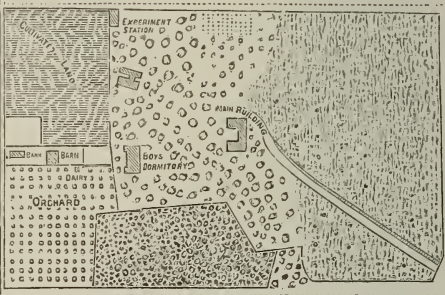
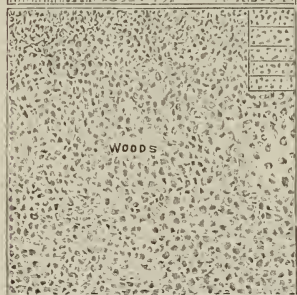
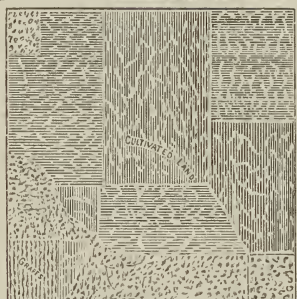
C. B. Collingwood, Chemist.

G. A. Humphrey, Assistant Chemist.

A. F. Cory, Assistant at Pine Bluff.

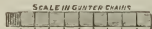
J. K. Fitzgerald, Assistant at Newport.

The report of the work of the Stations will be published in February, 1889, as required by law.



MAP
OF
A.I.U. FARM.

SCALE IN GUNTER CHAINS



INVENTORY OF APPARATUS, CHEMICALS AND FIXTURES OF THE CHEMICAL DEPARTMENT.

ARTICLES.	VALUE.
Porcelain basins.....	\$ 9 00
Test tubes	3 00
Mortars	10 00
Burettes	9 00
Stands	3 00
Glass tubing	10 00
Milk apparatus	8 00
Pipettes	4 00
Areometer	5 00
Nitrogen tubes	5 00
Deiscators	6 00
Rubber hose	2 00
Tables	10 00
Sinks	10 00
Balances	225 00
Weights	9 00
Platinum ware.....	27 00
Gas machine	480 00
Crystals	18 00
Ore crusher	40 00
Fletcher apparatus	20 00
Gas fixtures	220 00
Hood	56 00
Table for quant. laboratory.....	10 00
Work benches	250 00
Retort stands	20 00
Sprengel pumps	18 00
Drying ovens	13 00
Water batters	6 00
Bunsen burners.....	17 00
Reagent bottles	39 00
Blast lamp and stand	9 00
Porcelain crucibles	3 00
Cylinders	9 00
Footblower	4 00
Filter racks	3 00
Crucibles and disks	3 00
Beakers	4 00
Minerals	6 00
Assay furnace	20 00
Graduating flasks	6 00
Common flasks	2 00
Chemicals	125 00
Total	<hr/> \$1756 00

AGRICULTURAL DEPARTMENT.

1887.		Amount
Aug	8 Towels, Reed & Ferguson.....	\$ 1 36
"	9 Stamps and envelopes.....	55
"	10 Blank books and paper.....	1 35
"	11 Stamps and envelopes.....	55
"	11 Repairs in shop.....	10
"	11 Nails.....	15
"	11 Cleat.....	30
"	12 Sharpening cross saws.....	50
"	13 E. J. Hall, on account stone wall.....	16 00
"	15 Halters and stake rope.....	2 50
"	15 Stamps and envelopes.....	1 10
"	17 Expenses to Bentonville, Bates and self.....	6 45
"	17 Stamps.....	1 50
"	17 Dynamite.....	2 05
"	18 Mules (2).....	300 00
"	18 Stamps.....	1 25
"	19 Bates, for team.....	2 50
"	19 Mules (2).....	220 00
"	19 Hall, on account stone wall.....	10 00
"	19 Stamps.....	30
"	21 Printing, S. Marrs.....	5 00
"	21 Augers.....	1 10
"	21 Hatchet.....	50
"	21 Nails.....	20
"	21 Blacksmith.....	25
"	22 Stamps.....	1 50
"	22 Knife.....	50
"	24 Harness.....	29 00
"	26 Leverett, for work (Purinton's account).....	75
"	26 Express.....	4 45
"	26 Volner (Purinton's account).....	2 75
"	27 West, labor.....	3 17
"	27 McKensey, labor.....	1 48
"	27 E. J. Hall, wall account.....	5 00
"	27 Boy, for cleaning.....	75
"	29 Mallinckrodt, chemicals.....	21 22
"	29 Eimer & Amend, apparatus.....	2,38 01
"	29 Patridge & Reagan, stationery.....	13 30
"	29 Bates, sundries.....	39
"	29 Stamps.....	2 00
"	29 Collins, labor.....	2 96
"	30 Scales.....	1 25
"	30 Paper basket.....	85
"	30 Boy, cleaning.....	25
Sept.	1 Hoag, labor.....	6 77
"	1 Hoag (Purinton's account).....	2 62
"	1 J. Ward (Purinton's account).....	3 20
"	1 Wm. Howerton (Purinton's account).....	2 53
"	1 F. J. Lee (Purinton's account).....	2 56
"	1 Jno. Collins (Purinton's account).....	3 60
"	1 A. Pace (Purinton's account).....	3 45
"	1 J. Harmon (Purinton's account).....	5 70
"	1 Ben Wood (Purinton's account).....	2 32
"	1 Hugh Jackson (Purinton's account).....	3 45

AGRICULTURAL DEPARTMENT—*Continued.*

1887.		Amount.
Sept.....	1 E. Davies (Purinton's account).....	\$ 3 45
"	1 A. J. & G. Taff (Purinton's account).....	6 94
"	1 E. Steere, labor.....	1 25
"	1 Jno. Harmon, labor.....	13 15
"	1 Jno. Harmon (Purinton's account).....	13 44
"	1 Storer Leverett, labor.....	9 77
"	1 S. Morrow, labor.....	11 49
"	1 L. Daniels, labor.....	9 15
"	1 J. West, labor.....	95
"	1 Dick Irvin, labor.....	3 55
"	2 Dick Irvin (Purinton's account).....	4 22
"	2 J. Walker (Purinton's account).....	1 68
"	2 Sam Vaulx (Purinton's account).....	3 27
"	2 Express.....	1 40
"	2 Postal Cards.....	5
"	3 Covering and table.....	4 50
"	3 Cyclostyle.....	10 00
"	3 DeLong & Co., blue grass.....	2 05
"	3 Josenhaus, wheat.....	1 05
"	3 Sam Morrow (Purinton's account).....	2 92
"	3 Sam Morrow.....	1 54
"	3 P. Thomas (Purinton's account).....	4 22
"	3 E. J. Hall, on account of stone wall.....	8 00
"	3 Jim Harmon, labor.....	94
"	5 Adams Express company.....	5 75
"	5 J. E. Taylor (Purinton's account).....	6 68
"	5 S. Leverett (Purinton's account).....	6 28
"	6 Whit. Taylor (Purinton's account).....	5 00
"	6 McCormick (Purinton's account).....	2 50
"	8 George Riley (Purinton's account).....	5 00
"	8 Files.....	70
"	9 Bates, labor.....	90
"	9 Postal Cards.....	5
"	10 Telegram.....	50
"	10 C. McIlroy (Purinton's account).....	50
"	10 Jake Harmon, labor.....	5 96
"	10 Capt. Reynolds, blackboards.....	16 71
"	12 Adams Express.....	1 80
"	13 Stamps.....	2 00
"	14 L. Gregg, (Purinton's account).....	4 22
"	15 Frisco Railway, freight.....	10 59
"	15 Adams Express.....	1 25
"	16 E. McAfee, labor.....	3 50
"	17 J. Wyley, Sr., labor.....	4 00
"	17 J. Wyley, Jr., labor.....	5 00
"	17 Tom Wyley, labor.....	5 00
"	17 Jim Wyley, labor.....	5 00
"	17 A. McAfee, labor.....	4 00
"	17 H Smith, labor.....	4 00
"	17 H. Hollandsworth, labor.....	2 00
"	17 W. L. Owens, labor.....	2 00
"	17 L. Daniels, labor.....	10 00
"	17 Smith, blacksmith.....	5 50
"	17 Crozier, fence posts.....	7 12

AGRICULTURAL DEPARTMENT—Continued.

1887		Amount.
Sept.	17 Telegrams.....	\$ 1 20
"	19 Twombly, sundries.....	50
"	19 E. J. Hall, on stone wall account.....	16 00
"	19 Bates, sundries.....	75
"	23 J. Wyley, Sr., labor.....	5 00
"	23 J. Wyley, Jr., labor.....	5 00
"	23 Jim Wyley.....	5 00
"	23 Tom Wyley.....	5 00
"	23 A. McAfee.....	6 50
"	23 E. McAfee, labor.....	5 00
"	23 H. Smith.....	5 00
"	23 Hollingsworth.....	5 00
"	23 W. L. Owen, labor.....	4 50
"	23 Ballard, labor.....	3 00
"	23 Pauss, labor.....	5 00
"	23 C. Little, labor.....	3 00
"	23 J. Sampson, labor.....	3 00
"	23 John Ballard, labor.....	4 00
"	23 L. Mills, labor.....	5 00
"	23 S. Wilson, labor.....	3 50
"	23 J. Manch, labor.....	3 50
"	23 Z. Patrick, labor.....	3 50
"	23 Jones, harness.....	9 00
"	23 W. F. Bates, paid out for labor.....	7 50
"	23 W. F. Bates.....	30 00
"	23 Jake Harmon, contract on grubbing.....	25 00
"	23 McCollum, fence posts.....	25 00
"	24 Traveling expenses, Kansas City and St. Louis.....	49 95
"	30 Robt. Kirk, trip with cattle and fare.....	23 00
"	30 Holsteins, T. B. Wales, Jr.....	422 50
"	30 Southworth, axe.....	1 00
"	30 John Ballard, labor.....	1 00
"	30 Nimms, labor.....	1 00
"	30 Howell, labor.....	45
"	30 Jake Harmon, labor.....	1 35
"	30 A. McAfee, labor.....	1 00
"	30 Owen, labor.....	1 00
"	30 Hollandsworth, labor.....	1 00
"	30 Jim Wyley, labor.....	50
"	30 Jeff Alberty.....	35
"	30 Adams Express.....	3 65
"	30 Feed.....	2 50
"	30 Marrs, printing.....	2 00
"	30 Telegram.....	90
Oct.	1 Wagon, Campbell & White.....	60 00
"	1 Frisco Railway Company, freight.....	119 26
"	1 Fisher, freight.....	3 35
"	1 A. Parks, labor.....	1 00
"	1 Z. Patrick, labor.....	2 50
"	1 C. Tuttle, labor.....	35
"	1 A. Parks, labor.....	50
"	1 Hay.....	2 70
"	2 Smith, blacksmithing.....	8 70
"	2 John Harmon, labor.....	16 75

AGRICULTURAL DEPARTMENT—*Continued.*

1887		Amount.
Oct.....	2 John Wyley, labor	4 40
"	2 I. French, labor	3 00
"	2 John Wyley, labor	3 75
"	2 T. Daniels, labor	10 00
"	2 Jim Wyley, labor	6 00
"	2 Tom Wy'ey, labor	7 00
"	2 A. McAfee, labor	4 75
"	2 A. McAfee, labor	5 85
"	2 A. Parks, labor	4 35
"	2 Cy Little, labor	4 65
"	2 John Ballard, labor	3 00
"	2 L. Mimms, labor	4 50
"	2 P. Parcus, labor	3 75
"	2 J. Simmons, labor	3 60
"	2 I. Wilson, labor	1 50
"	2 L. Patrick, labor	3 50
"	2 S. Walker, labor	4 10
"	2 A. Brookshire, labor	5 00
"	1 W. Speer	5 10
"	1 W. Hill	4 10
"	1 R. Irwin	6 75
"	1 W. Peebles, lumber	18 00
"	1 W. Bates, sundries	2 50
"	3 Ludlow-Saylor Co., wire	69 82
"	3 Geo. F. Bruner, fertilizers	47 50
"	3 J. A. Everitt, seeds	4 62
"	3 P. Henderson, seeds	2 90
"	3 Jones Scale Works, wagon scales	65 00
"	3 P. P. Most & Co., drill and attachments	50 20
"	3 H. Heil, apparatus	29 34
"	3 Shapleigh Hardware Company, mower	9 50
"	5 Express company	2 65
"	5 Postal cards	10
"	5 Box rent	50
"	5 Harris, labor	45
"	5 Harris, labor	57
"	6 Cate, fence posts	31 25
"	8 W. Speers, labor	5 00
"	8 E. McAfee, labor	5 00
"	8 Telegrams	75
"	8 W. Howell, labor	45
"	8 J. Wills, labor	88
"	8 Cockman, labor	1 57
"	8 Galloway, labor	1 10
"	8 J. A. Runel, labor	95
"	8 W. Speer, labor	95
"	8 C. A. Harris, labor	33
"	8 J. Hocott, labor	93
"	8 J. Whitney, labor	33
"	8 Adams Express Company	1 25
"	8 File	10
"	8 Bran and oats	3 05
"	8 Milk buckets	90
"	8 Axle grease	10

AGRICULTURAL DEPARTMENT—*Continued.*

1887	Amount.	
Oct.	8	Bolt. \$ 5
"	8	Bates, sundries. 25
"	8	J. Wyley, Sr., labor. 6 87
"	8	J. Wyley, Jr., labor. 5 50
"	8	Tom Wyley, labor. 5 50
"	8	A. McAfee, labor. 5 50
"	8	P. Parus, labor. 5 50
"	8	L. Patrick, labor. 4 50
"	8	A. Brookshire, labor. 5 00
"	8	W. Hill, labor. 5 00
"	8	I. French, labor. 4 00
"	8	A. Thomas, labor. 4 25
"	8	S. Wooten, labor. 2 00
"	10	Stamps. 80
"	10	David Carlisle, feed. 31 33
"	10	Blankets. 3 50
"	10	Scissors. 40
"	14	Telegrams. 1 35
"	15	Adams Express. 1 00
"	15	J. Wyley, Sr., labor. 7 20
"	15	J. Wyley, Jr., labor. 5 00
"	15	Tom Wyley, labor. 6 00
"	15	E. McAfee, labor. 3 50
"	15	A. McAfee, labor. 6 40
"	15	T. Brough, labor. 3 00
"	15	J. Boland, labor. 2 00
"	15	T. Parcus, labor. 1 50
"	15	L. Patric, labor. 5 65
"	15	A. Brookshire, labor. 4 00
"	15	W. Hill, labor. 5 00
"	15	A. Thomas, labor. 5 50
"	15	J. Wooten, labor. 5 75
"	15	J. Owen, labor. 5 50
"	15	I. Crowder, labor. 2 50
"	15	W. Peebles, lumber. 4 45
"	15	H. Speers, labor. 3 50
"	15	E. J. Hall, final payment stone wall account. 93 15
"	15	J. F. Whitney, labor. 1 00
"	15	W. Spears, labor. 1 05
"	15	C. A. Harris, labor. 1 00
"	15	P. Galloway, labor. 61
"	15	R. Dowell, labor. 86
"	15	Cockman, labor. 1 10
"	22	W. Duggins, well account. 35 00
"	22	Byrnes & Blackmer, barn account. 400 00
"	22	O'Brien, labor on gas machine. 30 00
"	24	Daniels, labor. 10 00
"	26	W. Duggins, well account. 146 00
"	27	J. Wyley, Sr., labor. 11 25
"	27	Tom Wyley, labor. 9 50
"	27	A. Thomas, labor. 9 50
"	27	Daniels, labor. 10 00
"	27	Owens, labor. 1 70
"	27	W. Spears, labor. 8 50

AGRICULTURAL DEPARTMENT—*Continued.*

1887		Amount.
Oct.....	27 Telegrams	65
"	27 Eggs, flour	1 50
"	27 Bates, railway fare, etc., Ft. Smith	2 40
"	27 O'Brien, labor on gas machine	21 00
"	27 Expenses at Fort Smith over receipts	20 00
"	27 Williams, building stone foundation	7 00
Nov.....	5 Oats and bran	7 80
"	5 Hocott, labor	1 20
"	5 Expenses	80
"	7 Daniels, labor	5 00
"	7 Wills, labor	1 45
"	7 Cockman, labor	1 50
"	9 Shelly, grubbing	25 00
"	9 Patterson Bros., seed	1 59
"	9 Ludlow Saylor Co., wire	14 63
"	9 Rumsey Manufacturing Co., sundries	11 26
"	9 McCullough Sons & Co.	6 40
"	9 C. R. Squibb, ether	8 81
"	9 L. E. Archias, seed	2 55
"	12 Ward, labor	1 95
"	12 Galloway, labor	1 00
"	12 Whitney, labor	1 55
"	12 Russel, labor	1 55
"	12 Daniels, labor	10 00
"	12 Locks	2 70
"	12 Dowell, labor	1 70
"	12 Fisher, freight, Frisco Railroad	46 98
"	12 Cate, fence posts	13 25
"	15 Stamps	10
"	19 Expenses for Little Rock and Expos.	83 05
"	19 Daniels, labor	5 00
"	19 Stamps	1 00
"	21 Freight, Frisco Railroad	17 60
"	22 Straw	1 50
"	22 Freight	25
"	23 Perry, labor	50
"	23 Harris, labor	2 37
"	23 Wills, labor	90
"	23 Spears, labor	4 57
"	23 Galloway, labor	1 75
"	23 Nauck, labor	75
"	23 Woodward, labor	1 75
"	23 Whitney, labor	1 32
"	23 Dowell, labor	87
"	23 Ward, labor	63
"	25 Stephens, Lith. Co., stationery	9 00
"	25 Daniels, freight	95
"	25 Byrnes & Blackmer, barn account	600 00
"	29 Stamps	1 00
"	29 Cockman, labor	1 40
"	29 Shelby, grub contract	40 00
"	29 Feed	85
"	29 Dowell, labor	82
"	29 Whitall, Tatum & Co.	38 52

AGRICULTURAL DEPARTMENT—*Continued.*

1887		Amount.
Dec	1 T. Daniels, labor	\$ 15 00
"	2 Adams Express	4 70
"	3 C. Thomas, labor	15 00
"	3 Stamps	2 00
"	10 Cate, fence posts	14 37
"	20 Shelby, grub contract, final payment	84 00
"	31 Cockman, labor	18 55
1888		
Jan.	1 Daniels, labor	25 00
"	1 Bates, labor	20 90
"	15 Morgan, feed	5 33
"	16 P. P. Johnston, hogs	20 00
"	16 Frisco Railway, freight	27 61
"	16 Paper and stamps	5 00
"	16 Sundries	3 50
"	16 Copying paper	1 00
"	16 Mechanical department	17 70
"	16 Stamps	2 00
"	16 Hay	12 00
"	16 Blacksmith	5 65
"	17 Foote	2 62
"	17 Postage	2 00
"	21 Sundries	9 35
"	21 Daniels	15 00
"	21 Straw	1 25
"	21 Shears	50
"	21 Deering	85
"	21 Hay	9 45
"	21 Straw	1 50
"	21 Livery	50
"	21 Freight	1 35
"	21 Express	1 05
"	21 Hay	2 50
"	21 Labor	1 25
"	21 Straw	2 00
"	21 Freight	4 85
"	21 Lumber	1 40
"	21 Bates, labor	2 50
"	21 Adams Express	1 10
"	21 J. M. Ross, (Mayo)	5 00
"	21 Sundries	85
"	21 Telegram	50
"	21 Mucilage	10
"	21 Straw	15 00
"	27 Lumber	24 85
"	27 Gas machine, Springfield Machine Co., Chicago	424 80
"	27 Hardware, E. B. Harrison	70 70
"	27 Manure spreader, Columbus company	100 00
Feb.	1 Wheel-Enterprise, clerk work	2 50
"	1 Frisco Railway, freight	10 05
"	1 Stamps	3 50
"	1 Craig plow	17 50
"	1 Cazort, lumber	22 80
"	1 Conner, feed	19 83
"	1 Mallinckrodt, chemicals	23 98

AGRICULTURAL DEPARTMENT—Continued.

1888		Amount.
Feb	1 Eimer & Amend, apparatus.....	\$ 43 77
"	1 Fort Smith Oil Company.....	14 00
"	1 Hy Heil, apparatus.....	50 79
"	1 Mulholland & Lake, dynamite, etc.....	33 20
"	4 Telegram.....	45
"	4 Feed cutter.....	5 00
"	10 Murfee, labor.....	25
"	10 Gardner, labor.....	1 50
"	10 Ink.....	50
"	10 Conner, feed.....	4 80
"	10 Jones (harness).....	3 65
"	10 Capt. Reynolds.....	3 40
"	11 Millsaps.....	7 80
"	11 Gregg, hay.....	12 51
"	11 Putnam, hay.....	14 87
"	11 Bates, labor.....	11 50
"	11 Bates, labor.....	2 10
"	11 Davies, supplies.....	4 95
"	11 Western Union Company.....	40
"	16 Irwin, labor.....	12 00
"	16 Boles, bran.....	8 00
"	16 Ballard, labor.....	3 00
"	16 Douglas, labor.....	4 00
"	16 Vaughan, labor.....	3 00
"	16 Shepherd, labor.....	1 00
"	16 Stapp, straw.....	2 00
"	16 Express charges.....	55
"	18 Corle, labor.....	5 50
"	18 A. Thomas, labor.....	5 50
"	18 Ed Smith, labor.....	50
"	18 A. Vaughan, labor.....	2 00
"	18 Bates, for sundries.....	3 15
"	20 Adams Express.....	3 50
"	20 Help.....	15
"	22 Blank books.....	30
"	25 Ballard, labor.....	4 75
"	25 Leghorn, labor.....	50
"	25 Leverett, labor.....	60
"	25 Irvin, labor.....	2 50
"	25 Adams Express.....	50
"	25 Rumsey Bro's, pump.....	101 50
"	25 Telegram.....	30
"	25 Irvin, labor.....	80
"	25 Matches.....	25
"	25 Labor.....	1 50
"	25 Druggins & Co., well.....	145 00
"	25 Miller Company, Beecher, Ill., stock.....	580 00
"	25 Expenses traveling, two men.....	150 15
March	1 Carzort Bro's.....	6 20
"	1 Stamps.....	2 00
"	1 Frisco Railway, freight.....	90 68
April.....	5 Byrnes & Blackmar, dairy barn account.....	262 60
"	5 Hy Heil, apparatus.....	59 38
"	7 Labor.....	40 53

AGRICULTURAL DEPARTMENT—*Continued.*

1888		Amount.
April	28 E. B. Harrison, fixtures	\$ 149 00
"	28 Williams, stone walk	200 00
July	7 Byrnes & Blackmer, dairy barn account	700 00
Oct.	8 C. E. Conner, feed	20 80
"	8 Boles, feed	39 48
"	8 Queen & Co., apparatus	118 20
"	8 , corn	27 00
Feb 11 Mar 20	Loaned Ex. St.	487 47
Grand total		\$ 9,105 55

RECEIPTS.

1888		Amount.	Amount.
Oct.	13 Wood	\$ 42 15	
Jan	28 Wood	18 75	
"	28 Wood	328 00	
May	24 Service fees	15 00	
"	24 Ex St	1,610 42	
June	5 Ex St	1 00	
"	9 Service fees	15 00	
Aug	1 Service fees	25 00	
"	30 Service fees	31 75	
Oct.	17 Potatoes	30 00	
"	23 Wheat	26 35	
"	27 Potatoes	5 35	
Nov	10 Wood	18 00	
	Appropriation	8,000 00	
	A. E. Menke, Exp		\$ 9,105 55
	Geo. Purinton		1,004 00
Total		\$ 10,166 77	\$ 10,109 55
Balance			\$ 57 22

REPORT OF THE PRINCIPAL OF THE BRANCH NORMAL COLLEGE.

To His Excellency, Governor Hughes :

DEAR SIR: Col. James Mitchell has just visited this institution and inspected its condition and working; and at his suggestion, I take the liberty of respectfully offering some suggestions in reference to its future operations and prosperity, as follows:

I. It was Col. Mitchell's suggestion, which I heartily endorse, and which I hope will strike you favorably, that an Industrial Department should be added to the institution. A building for that purpose could be so constructed, I think, as to afford sleeping apartments for males together with a kitchen for those who would wish to do their own cooking.

II. As I presume the present dormitory will be devoted to the use of females, the above arrangement would make some provision for males. The present dormitory will need some provision for furniture, but I presume that the cost will be quite moderate. I have carefully saved every thing which seemed to me to be available for that purpose, and have on hand eight wood stoves, eight or ten lamps and enough desks, which are somewhat out of repair, but good enough with some little mending, to place one in each room of the dormitory. There are fifteen rooms exclusive of the kitchen and dining room and closets. A bedstead, washstand, mirror and two or three chairs would be nearly an outfit for a chamber.

III. The dormitory has no shutters, inside or out, but I think that outside blinds would be a great addition.

IV. It would be of great advantage in the educational work of the institution to have some apparatus for teaching

Natural Philosophy, Chemistry and other branches of Physics. At present there is none, excepting some rough articles, which were constructed by myself. Dealers in such goods now supply an outfit for Chemistry and one for Natural Philosophy for about \$100 each, which would do very well for present needs.

V. A very desirable addition to our facilities would be some good books for reading. If the unexpended portion of the appropriation to furnish the library could lawfully be expended for books, it would make a very fair beginning of a library.

VI. There never has been any provision for a janitor, and I have done that work myself, using up the energy which I think I could more profitably direct to the work of instruction. To do this extra work, employs me an hour or more before school and until dark after school has closed.

VII. As to the financial condition of the institution, as shown by the balance in the hands of the treasurer, I have no information, but presume that the Board of Trustees will attend to seeing that, if necessary, due provision shall be made for current expenses during the ensuing two years. All of which is respectfully submitted,

J. C. CORBIN,
Principal.

[The catalogue of the University, copy for which was deposited with these reports, and which constitutes an integral part of the Biennial Report, will follow as soon as it can be gotten out by the printer.]



BIENNIAL REPORT

— OF THE —

BOARD OF TRUSTEES

— OF THE —

ARKANSAS INDUSTRIAL UNIVERSITY.

— TO —

HIS EXCELLENCY JAMES P. EAGLE,

GOVERNOR OF ARKANSAS.

~~~~~  
BY AUTHORITY.  
~~~~~

1891:
WOODRUFF PRINTING CO.,
Little Rock, Ark.

REPORT
— OF THE —
BOARD OF TRUSTEES
— OF THE —
ARKANSAS INDUSTRIAL UNIVERSITY.

To His Excellency James P. Eagle, Governor of the State of Arkansas:

SIR—The Board of Trustees of the Arkansas Industrial University would respectfully present a brief synopsis of its action at its last meeting—December 1 to 4, 1890.

The act of the Legislature of 1887, known as the “Banker bill,” by which all male students are required to work either in the agricultural or mechanical department of the University, has been practically enforced since its enactment, and we but give expression to the almost universal sentiment of instructors and students when we say that a modification of the law, so far as it relates to compulsory labor, will greatly subserve the interests of the school. To this end the the Board adopted a resolution asking the General Assembly to amend the law so that the work hours in the Agricultural and Mechanical Departments be reduced from three hours to two hours per day; and that all labor be made optional after the Freshman year. The reduction in the hours of labor will give all the manual training which it is believed to be necessary, while it will not interfere to so great an extent

with the course of study adopted in the University. By a comparison with the manual labor systems of other institutions it will be found that two hours per day on the farm, or in the work shop, is about the average.

Sudden and sweeping changes in the teaching force of the University within the last scholastic year have wrought incalculable injury. Our teachers, as a rule, are poor men, and it is but natural and reasonable that they will accept positions where the best salaries are paid. For years past other institutions have been depriving the State University of many of its ablest instructors by the offer of higher salaries. This has a most demoralizing effect upon the school, and unless arrested, will produce the most calamitous results. To show to what extent the offer of higher wages by other institutions has affected the University, we would respectfully call attention to the following resignations which have occurred within the last scholastic year :

F. W. Simonds, Professor of Biology and Geology. (Resigned for higher salary).

Howard Edwards, Professor English Literature and Modern Languages. (Resigned for higher salary).

W. E. Anderson, Adjunct Professor of Mechanical Arts. (Resigned for higher salary).

C. B. Collingwood, Professor of Chemistry. (Resigned for higher salary).

J. W. Mayo, Instructor in Iron Work. (Resigned for higher salary).

L. C. Gardner, Instructor in Foundry and Forging. (Resigned for higher salary).

R. F. Beardsly, Instructor in Foundry. (Resigned for higher wages).

E. H. Richman, Adjunct Professor of Chemistry. (Resigned for higher salary).

These instructors were among the most efficient of our teaching force, and some of them are men of a very high

order of ability, whose talents easily won for them professorships in other states at salaries largely in excess of what they received in our University. There is but one way to secure and retain the services of the best teachers, and that is to pay them the market value of their services. In order to stop the continued drain upon our Faculty, the Board unanimously adopted the following:

“WHEREAS, In the last few years the Arkansas Industrial University has been deprived of many of its ablest and most efficient instructors by the offer of higher salaries in other institutions, and

WHEREAS, This continued draft upon the very best of our teaching force threatens to impair, in a most serious manner, the success of the institution,

“*Resolved*, That the General Assembly be respectfully requested to amend the law so as to confide to the Board of Trustees the authority to regulate all salaries and fees.”

In view of the fact that the salaries of the President and Professors in the Arkansas Industrial University are lower than those in a larger majority of the States in the Union, and in consideration of the fact to which we have just adverted, viz: That by reason of these low salaries our most efficient instructors are constantly leaving us, we most earnestly and respectfully ask the General Assembly to consider favorably the recommendation of the Board.

A resolution was also adopted requesting the General Assembly to amend the law regulating the payment of salaries to all officers and employes, so that all salaries may be paid monthly instead of quarterly, as at present. This change would conform to the rule now in force in the payment of State officers, clerks in the departments, etc., and would be most acceptable to the faculty and employes of the University—few of whom are in such a condition, financially, as to be able, without great inconvenience, to wait to the end of the quarter for the money due them.

The Board recommended an appropriation for a dormitory for the girls, and also for an addition to the boys' dormitory, to comprise a dining-hall, bath-rooms, lavatory, etc., estimates of the cost of which are submitted herewith. An appropriation for three additional cisterns is an absolute necessity, as the water supply is entirely inadequate. It is also recommended that a small appropriation be made to purchase Digests, Reports and text-books for use in the Law Department of the University.

For a full and detailed statement of the condition, workings and equipments of the institution, we refer to the biennial report of President Murfee and the reports of the heads of the Agricultural and Mechanical Departments. The report of J. L. Cravens, secretary and treasurer, containing the itemized current expense account for the past two years, is appended. Estimates of expenses for the next two years are submitted, as also are estimates for appropriations necessary for the Pine Bluff Branch Normal School for the same period.

We beg to assure your Excellency, and through you the Honorable General Assembly, that, in spite of the drawbacks incident to the wholesale resignations of teachers on account of inadequate salaries, and the dissatisfaction growing out of the requirement of what is believed to be an excessive amount of daily manual labor, the University has enjoyed a year of prosperity. The attendance has never been so large in all the history of the institution as during the last year. A most commendable spirit of harmony and good will pervades the faculty and students; the excellent discipline maintained in all departments, the thoroughness of instruction and the absence of all jars and friction between the school and the local community, all attest the excellent work done during the last year.

In the confident hope that the General Assembly may

continue to give the support necessary to make our University a great benefaction to our youth, the pride of our growing commonwealth and a blessing to all the people, we are

Very Respectfully,

JAMES MITCHELL,

W. M. FISHBACK,

W. B. WELCH,

W. H. LANGFORD,

J. W. KEESEE,

W. F. AVERA,

Trustees.

REPORT

— OF THE —

Superintendent of Mechanic Arts

— AND —

PROFESSOR OF ENGINEERING.

REPORT OF MECHANICAL DEPARTMENT.

DEPARTMENT OF MECHANIC ARTS AND ENGINEERING, }
ARKANSAS INDUSTRIAL UNIVERSITY, }
FAYETTEVILLE, ARK., Nov. 11, 1890. }

*To the Mechanical Committee of the Honorable Board of Trustees of the
Arkansas Industrial University.*

GENTLEMEN: I beg leave to submit the following report of this Department for the past two years:

The special appropriation of \$5,000 for the construction of a new shop building, and the removal of the shop equipment from the basement of the main building was found adequate, and the expenditure of the money was reported to you, and the account audited by the Board.

The current expenses have been kept within the appropriation for maintenance.

Numerous changes have occurred in the teaching force of the department on account of the low salary paid. Shop instructors should be paid at least \$1,000 a year. We can not hope to retain an adjunct professor of engineering at the low salary of \$1,000 a year, when many recent graduates in engineer-

ing are getting more. His work consists of teaching theoretical branches in the morning and drawing to large classes in the evening.

Every class in the college is represented by faithful students in engineering, and our engineering graduates are doing well in their practice.

The work in manual training has been carried on as heretofore, and the students have made substantial progress. It is yet too early to state what will be the influence of this training upon the development of the industries of the State, but I know that all who have had the training have been made much more capable citizens. Manual training is a necessity on account of an entire absence of the apprenticeship system in this country. Our course of instruction in manual training is similar to that universally given, and was reported to you in my last Report.

As a result of a study of our environs, I beg leave to submit the following recommendations :

1. As many of our students can attend school but a year or two, I recommend that a trade school be established for them, consisting of courses in Bricklaying, Carpentry, Cabinet Work, Plastering, House Painting and Plumbing. This I would have patterned after the New York City Trade School, of which I have made a careful study. I am sure that 500 students could be accommodated in our basement at one time, and that the expenses for materials would not be over \$20 a student per annum. The State could well afford to pay \$20 to have one of her sons become a skillful artisan. Trade School students should work at least five hours a day, be exempt from military duty, and attend the morning classes, or else night classes. The manual training course should still go on for students who will follow an advanced course. For the establishment of these six trade courses, I recommend that a special appropriation of \$6,000 be made for equipments.

2. I recommend that a few new machines be purchased for the shop, costing \$2,000.

3. I recommend that a mechanical testing laboratory be

established, for the testing of fuels, engines, machines, beams and all materials used in construction, for which I ask an appropriation of \$2,500 for equipments, and an appropriation of \$1,000 for building, which would be an annex to the shop.

4. I recommend that additional boiler power be purchased, and pipes, valves, fittings etc., and that the dormitory and other buildings be heated by steam. The appropriation required for this is \$8,000.

5. I recommend that a dynamo and other electrical appliances be purchased for the use and instruction of the students and that the University building be lighted therefrom. The appropriation needed for this is \$5,000.

6. I recommend that literary students above the Freshman class be exempt from manual labor.

7. I recommend that the time devoted to manual labor in the mechanical and engineering courses be reduced to two hours a day, and cease at the end of the Freshman year, after which more attention should be given to surveying, mechanical drawing, testing laboratory work, and work in the chemical laboratory.

8. I recommend that all my assistants receive a higher salary as before mentioned.

Appended are statements of the equipments of the mechanical department and the shop products.

The following is a summary of the Mechanical Department.

INSTRUCTORS.

One Superintendent of Mechanic Arts and Professor of Engineering, \$1,600.

One Adjunct Professor of Engineering and Instructor in Mechanical Drawing, \$1,000.

Three Shop Instructors, \$600 each.

One Instructor in Surveying Practice, \$200.

One Engineer, \$50 per month.

Current expenses of the shop per annum for supplies, \$700.

Students accommodated in the shops at one time, 70.

Cost of supplies per annum per student, \$10.

Students accommodated in drawing room at one time, 70.

Value of shop building, \$3,000.

Value of shop equipments, \$8,766.65.

Value of shop products for the past two years, \$3,468.70.

Cost of same, \$2,513.40.

Money paid for student labor in the shops for the past seventeen months, \$3,920.67.

Average per month, \$230.63.

Respectfully submitted,

J. M. WHITHAM,

Supt. of Mechanic Arts and Professor of Engineering.

To the Honorable Board of Trustees :

GENTLEMEN: The shop exhibit is ready for your inspection and Professor Schoff will be pleased to show it to you.

In case you consider it worthy of exhibiting before the Legislature, I suggest that it be sent to Little Rock and displayed from January 15 for two or three weeks. I also suggest that Mr. Hoag be put in charge of it. He will go for his traveling and hotel expenses and a dollar a day extra. I also suggest that Albert Wood go with him, or another student, and that the student get his expenses only.

The break in student labor of last summer, prevented our exhibit from being as good as we had expected.

Respectfully submitted,

J. M. WHITHAM,

Superintendent, Etc.

APPENDIX I.

INVENTORY OF EQUIPMENTS OF THE MECHANICAL DEPARTMENT.

APPENDIX I.

Inventory of Equipments of the Mechanical Department.

CONDITION.	ARTICLE.	VALUE.
Good	50 twist drills.....	\$30 00
	18 Whetworth standard reams.....	27 00
	3 expanding reamers.....	12 00
	5 standard rose reamers.....	5 00
	12 taps (made at A. I. U. shops).....	10 00
	5 special taps (made at A. I. U. shops).....	8 00
	19 taps.....	16 00
	2 taper reamers (made at A. I. U. shops).....	3 00
	1 drill gauge (A. I. U. shops).....	2 00
	2 centering squares.....	7 00
	1 surface gauge.....	1 50
	1 B. & S. Micrometer caliper.....	5 00
	16 sets of dies.....	25 00
	1 die stock, large.....	4 00
Damaged	1 die stock, small.....	1 00
Good	1 small screw plate with 2 sets dies.....	4 00
	2 tap wrenches (large and small).....	6 00
	1 hack saw with 5 blades.....	9 00
	3 center gauges.....	1 50
Broken	1 12-inch B. & S. hardened steel try square.....	10 00
Good	1 6-inch B. & S. hardened steel try square.....	5 00
	2 4-inch B. & S. graduated steel try squares.....	4 00
	2 4-inch B. & S. flat steel squares.....	4 00
	2 12-inch B. & S. steel scales.....	5 00
	1 9-inch B. & S. steel scale.....	1 25
	2 4-inch B. & S. steel scales.....	1 25
	1 bevel protractor.....	5 00
	1 ratchet drill.....	9 00
Poor	1 pipe cutter.....	2 00
Good	1 pipe cutter.....	4 00
Fair	3 pairs pipe tongs.....	15 00
	Plumbing tools.....	10 00
	1 spirit level.....	50
Damaged	1 linen tape.....	25
Good	6 iron clamps.....	2 00
	3 wood clamps.....	1 00
Damaged	4 clamp dogs.....	1 50
Fair	11 screw dogs.....	4 50
Broken	3 monkey wrenches.....	
Fair	4 monkey wrenches.....	4 00
Poor	7 dust brushes.....	75
Good	5 oil cans.....	1 50
Poor	12 file cards.....	50
Good	1 square foot wire brush for file cards.....	50
Fair	4 spring calipers.....	2 50
Poor	3 wing calipers.....	50
Good	2 spring dividers.....	1 25
Poor	3 wing dividers.....	1 00
Broken	1 spring plane.....	50
Fair	1 tenon saw.....	1 00
	1 oil stone.....	50
Good	2 mechanic's screw drivers.....	1 50
Fair	2 mallets.....	50
Good	88 lbs. plate brass.....	5 00
	3½ lbs. brass rod.....	75
	2¼ lbs. belt lacing.....	50
Fair	4 scratch awls.....	75
Good	3 emery wheels.....	6 00
	1 emery wheel, Arbors (shop made).....	2 00
	30 sheets emery cloth.....	75
	2 lb. emery.....	25
Fair	4 lbs. lathe tools, boxes.....	1 50
Poor	60 lathe tools.....	10 00
	5 hand scrapers.....	1 00
Fair	13 files.....	6 00
	20 cold chisels.....	5 00
	4 cape chisels.....	1 00
	30 center punches.....	3 50
Good	25 machinist's hammers.....	25 00
Poor	30 file handles.....	50
Good	15 pieces steel rod 12x¼.....	75
	25 lbs. waste.....	2 50
Broken	2 small machinist's vises.....	2 00

APPENDIX I—Continued.

CONDITION.	ARTICLE.	VALUE.
Fair	1 small vise.....	\$ 2 75
Good	1 hand vise.....	75
	6 large machinist's vises.....	50 00
	2 small machinist's vises.....	15 00
Damaged	1 pipe vise.....	4 00
Poor	2 counter sinks.....	50
Good	1 B. & S. No. 1 universal milling machine.....	425 00
	1 Lodge, Davies & Co. lathe, 19x9.....	325 00
Poor	1 small planing machine, 10x10x24.....	75 00
Fair	1 chuck for small planing machine.....	5 00
Good	1 pair of centers for small planing machine.....	5 00
Poor	1 small speed lathe.....	40 00
Good	1 engine lathe, 14x6 (F. E. Reed's make).....	175 00
	2 engine lathes, 14x6 (Blaisdell make).....	350 00
	1 combination chuck for Blaisdell lathe.....	30 00
	1 large planing machine, 24x24x72 (Pease).....	400 00
	1 grind stone, large.....	35 00
	1 No. 5 emery grinding machine.....	40 00
Poor	1 W. F. & John Barnes engine lathe, 12x36.....	25 00
Good	5 wall work-benches.....	100 00
Fair	2 belt punches.....	75
Good	6 turning lathes, mounted.....	210 00
Fair	1 band sawing machine, no saws.....	75 00
	1 scroll sawing machine.....	40 00
Good	1 double circular saw.....	175 00
	1 12-inch planing machine.....	75 00
Fair	1 moulding machine.....	90 00
Good	1 steam glue heater with pots.....	9 00
Poor	1 grind stone and hangings.....	2 00
Good	8 single benches.....	48 00
	5 double benches.....	60 00
	8 instantaneous grip vises.....	40 00
	1 blackboard.....	2 00
	12 cabinet clamps.....	9 00
	6 wood clamps.....	3 60
	2 braces.....	3 00
Poor	2 sets of bits.....	7 00
Good	1 3-inch extension bit.....	2 00
Fair	12 dust brushes.....	4 20
Good	18 hammers.....	9 00
	18 oil cans.....	4 50
	2 belt punches.....	30
Poor	11 pairs dividers.....	1 65
Fair	1 24-inch hand saws.....	13 75
	4 16-inch panel saws.....	2 40
	14 tenon saws.....	13 50
	4 26-inch hand saws.....	6 00
	2 rip saws.....	3 00
Poor	16 try squares.....	4 80
Good	3 spoke shaves.....	75
	18 oil stones.....	13 50
	3 drawing knives.....	3 75
Fair	5 auger bits and handles.....	3 00
	1 1/2 doz. scroll saws.....	2 25
	1 oil stove and glue pot.....	2 50
	6 marking gauges.....	1 50
	19 mortise gauges.....	7 60
Poor	14 mallets.....	2 80
Good	5 12-inch Stearns' iron clamps.....	7 50
	6 6-inch Stearns' iron clamps.....	6 00
	22 Baley's patent smoothing planes, 9-inch.....	33 00
	23 Baley's patent jack planes, 26-inch.....	40 25
	24 Baley's patent fore planes, 20-inch.....	48 00
	1 Baley's patent jointer plane, 21-inch.....	2 50
	1 Baley's patent jointer plane, 26-inch.....	2 75
Fair	9 common smoothing planes.....	4 50
	8 common jack planes.....	6 00
	10 common fore planes.....	10 00
Good	17 bench squares, 6x12-inches.....	12 75
Poor	3 framing squares, 16x24-inches.....	3 75
Fair	16 levels.....	4 80
Good	1 saw swedge.....	2 25
	3 saw sets.....	2 25
	1 cast wrench.....	15
	3 wood files.....	1 20

APPENDIX I—Continued.

CONDITION.	ARTICLE.	VALUE.
Good	16 sets bench gauges.....	\$ 36 00
Fair	6 sets wood turning tools.....	20 00
	15 sets bench chisels.....	30 00
Good	4 slip stones.....	50
	1 galvanized iron bucket.....	40
	1 hatchet.....	75
	Paint, varnish brushes.....	1 50
	3 quires sand paper.....	75
	2 oil cans.....	40
	1 carbon oil can.....	40
	100 lbs. wire casing nails, 4d, 6d and 8d.....	4 00
	5 gal. varnish.....	5 00
Poor	5 gal. alcohol.....	7 50
Good	5 lbs. shellac.....	3 75
	18 6-inch saw files.....	1 50
	4 10-inch saw files.....	1 40
	4 sets table casters.....	1 00
	16 lbs. 1½ inch brads.....	1 60
	6 lbs. ¾ inch brads.....	60
	3 lbs. 1-inch brads.....	30
	4 gross ½ inch screws.....	1 00
	4 gross 1-inch screws.....	1 20
Poor	750 feet cherry and walnut lumber.....	24 35
Good	870 feet W. P. Pattern lumber.....	43 50
	1 center table.....	3 00
	2 square tables.....	3 00
	1 drawing board.....	1 00
	1 hat rack.....	75
	2 brackets.....	1 50
	2 anvils, 140 lbs.....	20 00
	6 anvils, 90 lbs.....	45 00
	8 forges with hoods.....	350 00
	1 tuyere.....	2 50
	18 hammers.....	23 00
	7 squares.....	10 00
	20 pairs tongs.....	10 00
	1 swage block.....	8 00
	25 bottom swages.....	10 00
	27 top swages.....	15 00
	23 bottom fullers.....	12 00
	21 top fullers.....	13 00
	2 set hammers.....	1 50
	4 flatters.....	2 50
	14 hardies.....	3 50
	2 fan blowers.....	35 00
	2 emery wheels.....	13 00
Poor	2 doz. files.....	1 25
Good	2 soldering tools.....	50
	6 hand punches.....	2 25
	6 cold chisels.....	2 50
	1 exhaustor.....	25 00
	5 lbs. solder.....	1 00
	5 lbs. Babbitt metal.....	1 00
	150 lbs. scrap iron.....	3 00
	105 lbs. round iron.....	6 00
	200 lbs. square iron.....	8 00
	35 lbs. rivets.....	3 00
	1 oil stone.....	50
	13 heading tools.....	6 00
	1½ doz. wagon spokes.....	75
	80 lbs. tool steel.....	8 00
	3 10-lb. sledge hammers.....	5 00
	950 lbs. steel.....	90 00
	506 lbs. iron.....	30 00
	200 lbs. sheet iron.....	18 00
	1 large vise.....	12 00
	8 cold cutters.....	4 50
	6 hot cutters.....	3 25
	Shafting and belting.....	1,000 00
	Engine.....	400 00
	Boilers and pumps.....	1,000 00
	Reducing valve.....	120 00
	Automatic return trap.....	250 00
	1 Collan cupola.....	150 00
Poor	1 brass furnace.....	18 00

APPENDIX I—*Concluded.*

CONDITION.	ARTICLE.	VALUE.
Poor	4 small ladles.....	\$ 8 00
	2 large ladles.....	10 00
	2 graphite crucibles.....	2 00
	34 flasks (assorted sizes).....	34 00
	2 sand sieves.....	3 00
	7 sets moulders tools.....	49 00
	Benches, shelves, etc.....	12 00
	Sand.....	18 00
	1 platform scales.....	30 00
	914 lbs. pig iron.....	14 60
	44 lbs. brass.....	8 80
	352 lbs. copper.....	88 00
	2 lbs. tin.....	60
	15 lbs. zinc.....	2 25
Good	16 large drawing boards.....	32 00
	26 intermediate drawing boards.....	39 00
	2 extra large drawing boards.....	5 00
	12 T squares.....	9 00
	1 polar planimeter.....	20 00
Bad	1 steam engine indicator.....	20 00
	1 pantograph.....	2 00
	1 blue print frame.....	10 00
	Drawing supplies.....	2 00
	10 double drawing tables.....	80 00
	3 quadruple drawing tables.....	30 00
	1 solar transit.....	200 00
	1 engineer's transit.....	150 00
	1 compass.....	60 00
	1 Y level.....	85 00
	1 plane table.....	100 00
	2 steel tapes.....	15 00
	Chains, leveling rods, etc.....	20 00
	30 stools.....	30 00
	3 large tables.....	24 00
		\$8,766 65

APPENDIX 2.

Statement of the Products of the Shops

OF THE

Mechanical Department, Arkansas Industrial University,

For the Two Years Ending December 1, 1890.

APPENDIX 2.

Statement of the Products of the Shops of the Mechanical Department Arkansas Industrial University for the Two Years Ending December 1, 1890.

PRODUCT.	COST.	VALUE.
2 tables.....	\$ 3 00	\$ 4 00
Repairing water-closet.....	80	1 00
Fencing.....	80	1 00
Repairing chairs.....	60	80
Putting bottoms in chairs.....	6 00	9 00
Flower stand.....	1 80	2 00
Walnut book case.....	28 00	35 00
Brass castings.....	2 00	2 50
Iron bed.....	4 80	5 00
Cutting threads.....	50	50
780 exercises in woodwork.....	312 00	
Funnel rack.....	1 50	1 50
Shelving.....	3 50	3 50
Box stand and fixtures.....	2 50	2 50
125 brush handles.....	2 75	3 10
2 pulley sheaves.....	40	55
Repairing bed.....	80	1 00
Turning.....	60	75
Building new shops, grading, making walks, painting, removing boilers and chimney to new shops, putting down 600 feet 6-inch pipe, plumbing around new boilers, removing shop equipment and erecting same—student labor.....	1,000 00	2,000 00
6 foundry flasks.....	10 50	12 00
12 foundry tampers.....	1 20	1 50
12 foundry pins (gate).....	35	50
Repairing 12 flasks.....	2 40	3 00
Repairing floor in Chapel.....	3 00	3 00
36 bench doors.....	21 60	27 00
Repairing 18 benches, etc.....	31 50	36 00
160 feet chalk racks.....	4 00	5 00
Hat racks.....	4 50	5 00
12 small flasks.....	13 20	15 00
8 flask bottoms.....	1 60	2 00
2 lathe beds and fitting up.....	8 00	8 00
Fitting 12 locks.....	1 20	1 50
4 tool trays.....	2 40	3 00
1 tool cupboard.....	2 75	3 00
24-foot book case, library.....	3 00	4 00
Rebuilding 2 book cases.....	3 00	3 50
4 easels.....	3 00	4 00
Repairing 12 drawing boards.....	1 20	1 50
2 door screens.....	2 50	3 00
50 file handles.....	2 50	2 50
50 chisel handles.....	2 50	3 00
10 patterns for foundry.....	10 00	15 00
Scroll work.....	1 50	1 80
1 drawing board.....	40	50
1 set quilting frames.....	40	50
8 patterns for foundry.....	8 00	12 00
42 drying cases.....	4 20	4 20
1,009 stobs.....	1 75	2 00
Dressing and sawing lumber.....	1 00	1 25
15 patterns for foundry.....	2 50	3 00
2 pamphlet cases.....	6 00	12 00
2 doors.....	2 00	2 40
2 ladders.....	2 50	3 00
1 case for tools.....	1 25	1 50
20 feet casing and shelving.....	3 50	4 00
30 brackets.....	6 00	10 00
2 sets shelving.....	4 75	5 00
Scroll work.....	75	1 00
2 ice boxes.....	4 75	5 50
3 screen doors.....	2 00	2 35
6 pulleys.....	40	50
Crane blocks.....	75	1 00
1 portable house.....	200 00	300 00
Sample products of wood room.....	20 00	3 00

APPENDIX 2—*Concluded.*

PRODUCT.	COST.	VALUE.
600 exercises in iron work	\$ 120 00	.....
150 lathe tools.....	30 00	\$ 40 00
1 tea crane.....	5 00	4 00
1 lamp stand.....	4 00	5 00
2 hammers.....	50	1 50
1 large ladle	3 00	4 00
Castings for boilers.....	60 00	110 00
Miscellaneous castings.....	300 00	300 00
Repairs on machine in metal room.....	18 00	30 00
4 gear wheels.....	2 00	5 00
1 gear cutter.....	1 00	2 00
6 lathe centers.....	3 00	3 00
1 pipe center.....	50	1 50
3 taper sockets for drill chuck.....	1 25	3 00
1 taper reamer.....	25	75
6 sets taps.....	3 00	5 00
1 T. H. tap.....	50	50
6 pipe taps.....	3 00	6 00
2 square thread taps	1 50	3 00
3 special taps.....	1 75	3 00
1 arbor for emery grinder.....	1 50	2 50
1 drill gauge	1 00	1 50
1 flat drill	50	75
12 vise screws.....	12 00	12 00
1 jack screw.....	3 00	3 50
3 screws for same.....	3 00	3 00
2 bushings for pulleys.....	1 50	2 00
1 book press.....	3 00	2 00
2 book press screws.....	1 5	1 50
2 main shaft boxes.....	3 00	3 50
1 planer chuck.....	2 50	6 00
11 angle plates.....	5 00	6 00
39 vice jaws	6 00	5 00
20 jaw holders.....	6 00	5 00
1 jack screw top.....	50	50
10 flange wheels.....	5 00	6 00
6 pairs calipers.....	3 00	3 00
1 pulley (patent).....	2 50	5 00
20 taper arbors.....	12 00	12 00
2 engines.....	100 00	250 00
Total.....	\$ 2,513 40	\$ 3,468 70

SALARY ACCOUNT.

To amount estimate	\$ 29,370 91	.....
By amount expended		\$ 18,789 70
November 30, 1890—By amount balance unexpended		10,581 21
		\$ 29,370 91

BIOLOGY ACCOUNT.

To amount estimate	\$ 149 25	.....
By amount expended		\$ 105 71
November 30, 1890—By amount balance unexpended		43 54
		\$ 149 25

FARM ACCOUNT.

December 3, 1889—To amount balance for last year	\$ 183 61	
To amount estimate	400 00	
To amount products of farm	935 63	
By amount expended		\$ 1,491 05
November 30, 1890—By amount balance unexpended		28 19
	\$ 1,519 24	\$ 1,519 24

FUEL ACCOUNT.

December 3, 1889—To amount balance on hand	\$ 86 21	
To amount estimate	564 00	
By amount expended		\$ 656 50
November 30, 1891—To amount overdrawn	6 29	
	\$ 656 50	

EXPERIMENT STATION ACCOUNT.

To amount received from U. S. Treasurer	\$ 18,750 00	
To amount received from C. B. Collingwood	1 70	
By amount paid last year's overdrafts		\$ 286 85
By amount expended		17,586 20
November 30, 1890—By amount balance in treasury		878 65
	\$ 18,751 70	\$ 18,751 70

JANITOR ACCOUNT.

To amount of estimate.....	\$ 900 05	
By amount expended.....		\$ 541 90
November 30, 1890—By amount balance unexpended.....		358 15
		\$ 900 05

INSURANCE ACCOUNT.

November 30, 1890 —To amount balance in treasury.....	\$ 201 76	

LIBRARY ACCOUNT.

To amount of estimate.....	\$ 30	
To amount of F. W. Simonds.....	9 40	
By amount expended.....		\$ 214 73
November 30, 1890—By amount balance unexpended.....		94 67
	\$ 409 40	\$ 309 40

LIBRARY DEPOSIT ACCOUNT.

December 3, 1889—To amount balance on hand.....	\$ 21 85	
To amount of sundry students.....	40 00	
By amount refunded to students.....		\$ 35 30
November 30, 1890—By amount balance in treasury.....		26 55
	\$ 61 85	\$ 61 85

MISCELLANEOUS ACCOUNT.

To amount of estimate	\$ 800 19	
To amount of Whitham.....	3 50	
By amount expended.....		\$ 508 38
November 30, 1890—By amount balance unexpended.....		295 31
	\$ 803 69	\$ 803 69

POSTAGE ACCOUNT.

To amount of estimate.....	\$ 200 88	.....
By amount expended.....		\$ 145 75
November 30, 1890—By amount balance unexpended.....		\$ 55 13
		\$ 200 88

REPAIRS ACCOUNT.

To amount of estimate.....	\$ 249 10	.....
By amount expended.....		\$ 160 10
November 30, 1890—By amount balance unexpended.....		89 00
		\$ 249 10

ROOF ACCOUNT.

November 30, 1890—To amount balance in Treasury.....	\$ 11 60	.....

STATIONERY AND PRINTING ACCOUNT.

To amount of estimate.....	\$ 200 28	.....
By amount expended.....		\$ 220 75
November 30, 1890—To amount overdrawn.....	20 47	
	\$ 220 75	

STUDENT LABOR ACCOUNT.

December 3, 1889—To amount balance in treasury.....	\$ 3,412 66	.....
To amount received of Whitham.....	89 45	.....
By amount expended.....		\$ 3,196 57
November 30, 1890—By amount balance in treasury.....		335 54
	\$ 3,532 11	\$ 3,532 11

TRUSTEES' ACCOUNT.

To amount of estimate.....	\$ 800 80	.....
By amount expended.....		\$ 115 37
November 30, 1890—By amount balance unexpended.....		685 43
		<hr/> 3 800 80

MECHANICAL DEPARTMENT ACCOUNT.

To amount of estimate.....	\$ 851 60	.....
By amount expended.....		\$ 790 57
November 30, 1890—By amount balance unexpended.....		61 03
		<hr/> \$ 851 60

CURRENT EXPENSE ACCOUNT.

1889.		
December 4	To amount balance on hand.....	\$ 11,064 77
December 4	of J. M. Whitham.....	24 60
December 5.....	Geo. T. Lake.....	8 00
December 6.....	A. E. Menke.....	45 00
December 10.....	A. E. Menke.....	49 40
December 13.....	W. F. Bates.....	13 15
December 21.....	W. French.....	5 00
December 23.....	State Treasurer, current expense.....	6,000 00
December 24.....	J. M. Whitham.....	3 50
1890.		
January 2.....	U. S. Treasurer, experiment station.....	3,750 00
January 9-12....	Menke & Bates.....	67 40
January 20-21...	Menke & Bates.....	115 52
March 1.....	W. F. Bates.....	8 40
March 1.....	Collingwood.....	1 70
March 10.....	A. E. Menke.....	31 25
March 12.....	State Treasurer.....	5,500 00
March 13.....	W. F. Bates.....	20 00
March 20.....	F. W. Simonds.....	9 40
April 7.....	U. S. Treasurer, experiment station.....	3,750 00
April 7.....	J. M. Whitham.....	5 25
April 7.....	W. F. Bates.....	40 80
April 7.....	W. F. Bates.....	79 90
May 4.....	A. E. Menke.....	33 53
May 4.....	Washington county.....	4,000 00
May 8.....	J. M. Whitham.....	17 15
June 3.....	W. F. Bates.....	60 00
June 7.....	J. M. Whitham.....	5 30
June 27.....	U. S. Treasurer, experiment station.....	3,750 00
July 1.....	A. E. Menke.....	19 42
July 3.....	City of Fayetteville.....	1,454 04
July 5.....	Washington county.....	4,000 00
July 8.....	W. F. Bates.....	51 30
July 9.....	J. M. Whitham.....	14 95
August 7.....	U. S. Treasurer, experiment station.....	3,750 00
August 26.....	W. F. Bates.....	42 00
September 5....	J. M. Whitham.....	5 00
September 19...	A. E. Menke.....	74 60
October 1.....	W. F. Bates.....	35 00
October 4.....	U. S. Treasurer, experiment station.....	3,750 00
October 4.....	J. M. Whitham.....	8 80
October 9-23....	Menke & Bates.....	68 55
November 8.....	J. M. Whitham.....	8 40
November 15-17	Menke & Bates.....	61 91
November 18....	Tuition.....	2,298 23
November 18....	Sundry students, library deposit.....	40 00
November 25....	W. F. Bates.....	18 65
November 25....	Tuition.....	10 00
		\$ 54,169 67

CURRENT EXPENSE ACCOUNT.—Continued.

1889.		
December 2.....	By amount to H. Edwards, Salary.....	\$ 375 00
December 2.....	J. M. Whitham, Salary.....	400 00
December 3.....	W. French, Repairs.....	4 00
December 3.....	W. French, Repairs.....	2 35
December 3.....	J. F. Moore, Library Deposit.....	2 00
December 3.....	E. B. Harrison, bill, Farm, etc.....	23 10
December 3.....	J. D. Van Winkle, bill Stationery.....	1 75
December 3.....	Geo. Sutton, bill Farm acct.....	14 70
December 3.....	E. B. Harrison, bill Miscellaneous acct.....	6 15
December 5.....	W. F. Bates, Student Labor acct.....	17 65
December 5.....	J. F. Bridges Janitor acct.....	5 00
December 5.....	T. T. Varner Janitor acct.....	5 45
December 5.....	W. E. Brandon, Janitor acct.....	4 80
December 5.....	Geo. T. Lake, bill Farm acct.....	92 40
December 5.....	J. H. Hamilton, Library Deposit acct.....	2 60
December 5.....	O. M. Patrick, Library Deposit acct.....	2 60
December 5.....	G. A. Humphreys, Library Deposit acct.....	1 90
December 7.....	A. E. Menke, Experimental Station acct.....	153 65
December 7.....	J. H. Moore, Library Deposit acct.....	2 00
December 9.....	Craven & Satterfield, Farm acct.....	33 50
December 9.....	J. P. Marbut, Farm acct.....	35 20
December 12.....	J. W. Peebles, Farm acct.....	27 41
December 16.....	Ida Pace, Salary.....	41 70
December 16.....	J. W. Hensler, Janitor.....	5 40
December 17.....	W. F. Bates, Farm acct.....	4 00
December 17.....	John Moore, Farm acct.....	18 75
December 20.....	F. R. Morrow, Farm acct.....	8 70
December 20.....	F. R. Morrow, Farm acct.....	10 05
December 20.....	C. H. Leverett, Salary.....	250 00
December 20.....	W. French, Farm acct.....	16 00
December 20.....	S. Y. Morrow, Farm acct.....	7 90
December 20.....	R. Skelton, farm acct.....	10 00
December 20.....	W. French, repairs acct.....	12 50
December 20.....	W. French, Salary.....	20 00
December 24.....	A. Volner, bill Miscellaneous acct.....	5 30
December 24.....	J. F. Howell, Salary.....	325 00
December 24.....	O. C. Gray, Salary.....	375 00
December 24.....	A. C. Hoag, Salary.....	150 00
December 25.....	A. C. Hoag, Farm acct.....	27 14
December 26.....	N. J. Williams, Salary.....	200 00
December 26.....	F. W. Simonds, Salary.....	375 00
December 26.....	R. B. Irwin, Farm acct.....	7 50
December 26.....	A. B. Lewis, Miscellaneous acct.....	4 15
December 26.....	McIlroy & Co., Salary acct.....	350 00
December 26.....	W. E. Anderson, Salary.....	250 00
December 30.....	A. Waggener, Salary.....	200 00
December 31.....	G. W. Broke, Salary.....	200 00
December 31.....	E. H. Murfee, Salary.....	500 00
December 31.....	W. W. McCart, Janitor.....	30 00
December 31.....	H. Murfee Miscellaneous acct.....	3 00
1890		
January 1.....	W. F. Bates, Salary.....	150 00
January 1.....	J. C. Massie Jr., Salary.....	200 00
January 1.....	C. B. Collingwood, Salary.....	125 00
January 7.....	McIlroy & Co., Experimental Station acct.....	327 70
January 7.....	J. L. Cravens, Salary.....	125 00
January 10.....	S. Y. Morrow, Farm acct.....	13 60
January 10.....	A. E. Menke, Salary.....	100 00
January 10.....	W. F. Bates, Farm acct.....	30 40
January 11.....	Mitchell & Bettis, bill.....	43 00
January 21.....	W. H. Whitlow, Farm acct.....	11 70
January 23.....	Patridge & Reagan, Printing acct.....	3 50
January 30.....	W. F. Bates, Farm acct.....	26 70
January 30.....	Hunter Murfee, Miscellaneous acct.....	3 00
January 31.....	W. W. McCart, Janitor.....	30 00
February 1.....	Frank Pace, Salary.....	41 66
February 4.....	Curry, Barnett & Co., Farm acct.....	6 75
February 4.....	W. P. Thomas, Farm acct.....	12 50
February 4.....	C. Dale, bill Miscellaneous acct.....	3 50
February 8.....	Frank Pace Salary acct.....	13 89
February 11.....	Geo. Riley, Farm acct.....	9 00
February 14.....	J. L. Craven, Miscellaneous acct.....	20 20
February 14.....	J. L. Craven, Postage acct.....	105 75
February 15.....	W. Thomas, Farm acct.....	10 00
February 21.....	S. Y. Morrow, Janitor.....	9 00

CURRENT EXPENSE ACCOUNT.—*Continued.*

1890.			
February 21.....	By amount	W. F. Bates, farm acct.	31 20
February 24.....		G. W. Baldridge, Janitor acct.	10 90
February 25.....		W. McCart, Janitor.....	30 00
February 27.....		F. W. Simonds, salary.....	250 00
February 28.....		Hunter Murfee, Messenger.....	3 00
March 1.....		W. F. Bates, farm account.....	20 60
March 1.....		Cazort Bros., farm account.....	8 30
March 1.....		W. French, salary.....	40 00
March 4.....		F. R. Morrow, janitor.....	10 60
March 8.....		Jas. Mitchell, trustee.....	30 37
March 8.....		W. H. Langford, trust c.....	36 80
March 8.....		J. P. Eagle, trustee.....	21 00
March 8.....		W. B. Welch, trustee.....	5 00
March 8.....		W. M. Fishback.....	16 80
March 11.....		C. A. Mulholland, bill.....	20 50
March 12.....		W. F. Bates, miscellaneous account.....	5 05
March 13.....		W. F. Bates, farm account.....	21 25
March 15.....		C. Dale, bill, miscellaneous account.....	47 00
March 15.....		C. Dale, fuel account.....	414 75
March 15.....		A. Volner, repairs.....	2 65
March 15.....		E. B. Harrison, bill.....	4 15
March 15.....		E. B. Harrison, farm account.....	3 00
March 15.....		C. Duncan, library department account.....	2 00
March 15.....		Hunter Murfee, messenger.....	75
March 15.....		J. P. Marbut, farm account.....	23 20
March 19.....		Anderson & Smith, mechanical department.....	42 75
March 22.....		W. A. Crawford, salary.....	18 00
March 25.....		E. H. Murfee, miscellaneous.....	50 00
March 25.....		Wm. L. Long, tuition refunded.....	6 50
March 26.....		Mollie Taft, library account.....	10 00
March 26.....		C. H. Leverett, salary.....	250 00
March 28.....		Geo. Tuttle, repairs account.....	2 70
March 29.....		J. F. Howell, salary.....	325 00
March 29.....		H. Edwards, salary.....	375 00
March 30.....		N. J. Williams, salary.....	200 00
March 31.....		H. K. Wade, bill, miscellaneous account.....	13 00
March 31.....		J. M. Whitham, library account.....	20 62
March 31.....		J. M. Whitham, mechanical department.....	5 60
March 31.....		J. M. Whitham, salary account.....	958 34
March 31.....		W. W. Mc art, janitor.....	30 00
March 31.....		O. C. Gray, salary.....	375 00
March 31.....		E. H. Murfee, salary.....	500 00
April 1.....		A. C. Hoag, salary.....	150 00
April 1.....		W. F. Bates, salary.....	157 00
April 1.....		A. E. Menke, student labor.....	222 05
April 1.....		W. French, salary.....	50 00
April 1.....		S. E. Marrs, bill, printing.....	2 00
April 1.....		C. B. Collingwood, salary.....	125 00
April 1.....		E. S. Richman, salary account.....	41 65
April 1.....		E. S. Richman, biology account.....	3 60
April 2.....		C. Dale, farm account.....	34 75
April 2.....		J. F. Bridges, janitor.....	5 00
April 2.....		R. M. Counterman, janitor.....	3 50
April 2.....		J. C. Massie, jr., salary.....	200 00
April 2.....		W. E. B andon, janitor.....	4 50
April 2.....		E. B. Harrison, farm account.....	6 96
April 2.....		J. M. Whitham, student labor.....	373 20
April 2.....		A. E. Menke, salary.....	100 00
April 2.....		J. L. Craveus, salary.....	125 60
April 3.....		W. F. Bates, farm account.....	56 65
April 4.....		G. W. Droke, repairs account.....	75 00
April 4.....		G. W. Droke, salary.....	200 00
April 4.....		J. M. Whitham, mechanical department account.....	238 95
April 4.....		Cazort Bros., farm account.....	12 17
April 4.....		Cazort Bros., bill, miscellaneous account.....	6 75
April 5.....		J. G. Hedrick, janitor.....	4 60
April 5.....		Geo. T. Lake, farm account.....	67 33
April 8.....		L. Gregg, farm account.....	60 52
April 8.....		E. L. Fletcher, salary.....	33 33
April 9.....		W. R. Millsap, farm account.....	4 50
April 10.....		W. G. Greathouse, farm account.....	32 50
April 10.....		Fayetteville Milling Co., farm account.....	10 00
April 14.....		E. B. Harrison, mechanical department.....	93 40
April 14.....		Mitchell & Bettis, printing.....	42 50
April 16.....		W. B. Cole, miscellaneous account.....	5 00
April 16.....		J. R. Bardridge, janitor.....	2 50
April 17.....		J. Hale, repairs.....	8 00

CURRENT EXPENSE ACCOUNT—*Continued.*

1890.		
April 18.....	By amount Mellroy & Co., stationery account.....	\$ 16 00
April 23.....	L. Gregg, farm account.....	23 83
April 26.....	A. Waggener, salary.....	200 00
April 29.....	J. M. Whitham, student labor.....	400 00
April 29.....	W. W. McCart, janitor.....	30 00
May 1.....	W. French, salary.....	50 00
May 1.....	A. E. Menke, student labor.....	371 93
May 1.....	J. M. Whitman, student labor.....	92 70
May 3.....	Curry, Barnett & Co., farm account.....	12 50
May 3.....	B. F. Smith, farm account.....	2 10
May 3.....	B. F. Smith, repair account.....	7 30
May 3.....	H. Edwards, library account.....	43 35
May 3.....	J. M. Whitman, Mechanical Department.....	76 58
May 3.....	Jas. Baldridge, janitor.....	4 50
May 3.....	A. Byrnes, biology account.....	10 00
May 3.....	Sweetzer Wagon Co., farm account.....	15 00
May 3.....	W. E. Brandon, janitor.....	3 50
May 3.....	W. F. Bates, farm.....	56 95
May 3.....	J. S. Nesbit, janitor.....	5 00
May 6.....	C. A. Mulholland, stationery bill.....	13 75
May 6.....	A. C. Hoag, repairs account.....	6 70
May 6.....	A. C. Hoag, biology account.....	4 20
May 6.....	W. R. Mellroy, farm account.....	42 00
May 6.....	J. E. Crouch, farm account.....	3 90
May 7.....	J. G. Hedrick, janitor.....	4 00
May 9.....	C. D. Mellroy, farm account.....	11 35
May 12.....	John Dowell, farm account.....	10 50
May 12.....	W. D. Ash, farm account.....	8 00
May 15.....	C. Dale.....	4 17
May 16.....	W. W. McCart, Janitor.....	5 00
May 17.....	Jack Mount, farm account.....	8 50
May 17.....	J. M. Whitham, Mechanical Department.....	15 76
May 20.....	Jerome McNeil, biology account.....	24 00
May 20.....	W. F. Dowell, farm account.....	25 00
May 26.....	S. E. Marrs, printing.....	1 75
May 28.....	D. C. Ambrose, biology account.....	3 50
May 29.....	W. French, salary.....	50 00
June 2.....	W. W. McCart, janitor account.....	30 00
June 2.....	W. W. McCart, janitor account.....	5 00
June 2.....	G. W. Baldridge, farm account.....	37 50
June 2.....	W. F. Bates, student labor account.....	465 37
June 2.....	A. B. Lewis, bill, miscellaneous account.....	5 45
June 2.....	O. G. Hedrick, janitor.....	4 00
June 3.....	Jas. Baldridge, janitor.....	4 50
June 3.....	W. F. Bates, farm account.....	40 05
June 3.....	Mellroy & Co., Mechanical Department account.....	87 79
June 3.....	Mellroy & Co., student labor account.....	417 25
June 4.....	H. Edwards, library account.....	18 35
June 4.....	D. B. Jobe, farm account.....	3 75
June 6.....	W. J. Hoge, miscellaneous account.....	1 00
June 7.....	S. H. Blackmer farm, account.....	4 50
June 7.....	S. H. Blackmer, repair account.....	3 75
June 7.....	Curry, Barnett & C., farm account.....	10 10
June 7.....	J. S. Nesbit, janitor.....	5 00
June 7.....	W. E. Brandon.....	3 50
June 9.....	J. M. Thurmond, miscellaneous account.....	5 00
June 9.....	W. A. Crawford, salary.....	20 00
June 10.....	R. F. Smith, farm account.....	8 50
June 14.....	W. French, salary.....	14 70
June 14.....	S. H. Smith, miscellaneous account.....	1 05
June 14.....	E. Z. Davies, farm account.....	15 93
June 16.....	Mellroy & Co., Mechanical Department account.....	24 88
June 19.....	Mellroy & Co., biology account.....	38 86
June 20.....	W. H. Whitlow, biology account.....	13 30
June 25.....	J. M. Whitham, Mechanical Department.....	25 65
June 27.....	W. B. Corle, miscellaneous account.....	5 00
June 28.....	J. F. Howell, salary.....	325 00
June 28.....	H. Edwards, salary.....	375 00
June 28.....	H. Edwards, library account.....	15 70
June 28.....	E. L. Fletcher, salary.....	100 00
June 28.....	Frank Pugh, library deposit account.....	2 00
June 28.....	N. J. Williams, salary.....	200 00
June 28.....	A. M. Waggener, salary.....	200 00
June 28.....	J. M. Whitham, salary.....	400 00
June 30.....	G. C. Schoff, salary.....	250 00

CURRENT EXPENSE ACCOUNT—*Continued.*

1890.		
June 30	By amount J. T. Volentine, janitor.....	\$4 50
June 30	W. E. Brandon, janitor.....	3 50
June 30	W. W. McCart, miscellaneous.....	5 00
June 30	W. W. McCart, janitor.....	30 00
June 30	R. F. Beardsley, salary.....	150 00
June 30	C. B. Collingswood, salary.....	150 00
June 30	E. H. Murfee, salary.....	500 00
July 1	G. P. Eustace, salary.....	151 00
July 1	J. C. Massie, jr., salary.....	2 00 00
July 1	C. H. Levrett, salary.....	250 00
July 1	O. C. Gray, salary.....	375 00
July 1	W. L. Call, farm.....	3 00
July 2	A. C. Hoag, salary.....	150 00
July 2	A. E. Menke, salary.....	100 00
July 2	W. French, salary.....	50 00
July 2	W. F. Bates, salary.....	150 00
July 2	W. F. Bates, student labor account.....	102 45
July 2	Thomas Seif, library deposit account.....	1 80
July 2	Jerome McNeil, biology account.....	1 85
July 2	Jerome McNeil, salary.....	115 00
July 3	Geo. Baldrige, farm account.....	21 50
July 4	C. D. Bates, janitor.....	4 00
July 8	W. F. Bates, farm account.....	51 55
July 8	McIlroy & Co., student labor.....	95 00
July 8	J. L. Cravens, salary.....	125 00
July 9	C. Dale, miscellaneous account.....	5 50
July 10	C. Dale, miscellaneous account.....	12 25
July 11	J. P. Marbut, farm account.....	15 30
July 12	G. W. Droke, salary.....	200 00
July 14	A. G. Taft, farm account.....	20 00
July 14	J. S. Nesbit, janitor.....	5 00
July 14	A. Bryant, miscellaneous account.....	65
July 17	A. G. Taft, salary.....	50 00
July 22	McIlroy & Co., Experiment Station.....	7,533 93
July 26	Thomas L. Davis, miscellaneous account.....	3 30
July 26	J. M. Whitham, library account.....	5 63
July 26	J. M. Whitham, miscellaneous account.....	35 55
July 26	J. M. Whitham, Mechanical Department.....	59 23
July 26	J. F. Howell, library account.....	10 00
July 29	McIlroy & Co., library account.....	20 28
July 30	Florence Fisher, trustee account.....	5 40
July 31	W. French, salary.....	50 00
July 31	W. W. McCart, janitor.....	30 00
July 31	W. W. McCart, janitor.....	5 00
July 31	J. S. Nesbit, janitor.....	5 00
August 1	W. E. Brandon, janitor.....	3 50
August 1	Geo. Pugh, library account.....	1 70
August 2	W. F. Bates, student labor account.....	27 11
August 9	C. Dale, miscellaneous account.....	5 40
August 9	T. L. Davis, janitor.....	4 50
August 11	J. C. Futrall, library deposit account.....	2 00
August 14	C. D. Bates, janitor.....	4 00
August 16	McIlroy & Co., farm account.....	28 00
August 16	McIlroy & Co., physical department account.....	65 65
August 19	Patridge & Reagan, printing.....	2 50
August 20	H. Edwards, salary.....	225 00
August 23	J. F. Moore, library deposit account.....	2 00
August 23	E. A. Gray, miscellaneous account.....	6 00
August 25	B. F. Smith, farm account.....	7 05
August 26	C. Dale, fuel.....	231 75
August 26	J. N. Wheeler, library deposit account.....	2 00
August 26	W. F. Bates, farm account.....	46 50
August 27	Elias Core, library deposit account.....	2 00
August 28	W. E. Brandon, janitor.....	3 50
August 30	W. French, salary.....	50 00
September 1	T. L. Davis, janitor.....	4 50
September 1	W. W. McCart, miscellaneous account.....	5 00
September 1	W. W. McCart, janitor.....	30 00
September 1	Geo. Baldrige, library account.....	5 00
September 1	Geo. Baldrige, biology account.....	5 90
September 2	W. F. Bates, student labor account.....	33 10
September 2	J. M. Whitham, student labor account.....	75 00
September 3	G. W. Baldrige, farm account.....	29 95
September 3	L. E. Archias & Bro., miscellaneous account.....	1 50
September 4	C. D. Bates, janitor.....	4 00
September 5	W. French, fuel account.....	10 00

CURRENT EXPENSE ACCOUNT—*Continued.*

1890.		
September 6.....	By amount J. A. Gray, miscellaneous.....	\$ 5 00
September 6	S. E. Marrs, printing account.....	2 00
September 6.....	J. E. Wilson, library deposit account.....	2 00
September 6.....	E. B. Harrison, Miscellaneous.....	6 90
September 10.....	R. F. Beardsley, salary.....	116 65
September 13.....	J. S. Nesbit, janitor.....	6 40
September 15.....	E. B. Harrison, biology account.....	1 20
September 19.....	W. French, salary.....	50 00
September 19.....	John McCulloch, miscellaneous account.....	6 00
September 19.....	W. Thomas, miscellaneous account.....	6 50
September 19.....	C. H. Leverette, salary.....	250 00
September 19.....	J. L. Cravens, miscellaneous account.....	3 85
September 20.....	J. P. Morbut, farm account.....	50 05
September 23.....	J. D. Vanwinkle, stationery account.....	17 25
September 24.....	C. B. Collingwood, salary.....	125 00
September 26.....	E. L. Fletcher, salary.....	206 69
September 27.....	E. H. Murlee, salary.....	500 00
September 27.....	J. M. Whitham, mechanical department account.....	51 45
September 27.....	J. M. Whitham, salary.....	400 00
September 27.....	J. C. Massie, jr., salary.....	200 00
September 27.....	N. J. Williams, salary.....	200 00
September 27.....	Geo. C. Schoff, salary.....	250 00
September 27.....	Geo. P. Eustace, salary.....	150 00
September 27.....	Geo. W. Droke, salary.....	200 00
September 27.....	A. Waggener, salary.....	200 00
September 27.....	Mary Leverett, salary.....	23 35
September 27.....	J. F. Howell, salary.....	325 00
September 27.....	A. C. Hoag, salary.....	150 00
September 27.....	S. E. Marrs, printing.....	5 00
Sep ember 27.....	Robt. Guillaums, janitor.....	5 00
September 27.....	Robt. Guillaums, repairs account.....	1 85
S. ptember 27.....	Jerome McNeill, salary.....	125 00
September 27.....	O. C. Gray, salary.....	375 00
September 27.....	W. R. Harvey, salary.....	30 00
October 1.....	W. F. Bates, salary.....	150 00
October 3.....	W. F. Bates, student labor account.....	64 06
October 3.....	W. W. McCart, janitor.....	35 00
October 3.....	J. L. Cravens, salary.....	125 00
October 3.....	W. C. Stone, stationery account.....	10 00
October 3.....	C. H. Leverett, farm account.....	6 00
October 3.....	A. G. Taff, salary.....	50 00
October 3.....	A. B. Lewis, miscellaneous account.....	7 60
October 4.....	Will Guillaums, janitor.....	4 50
October 4.....	Arkansas Democrat Co., printing account.....	12 00
October 4.....	C. D. Bates, janitor.....	4 00
October 4.....	A. E. Menke, salary.....	100 00
October 4.....	J. M. Whitham, mechanical department.....	68 55
October 4.....	J. M. Whitham, salary account.....	19 50
October 4.....	J. M. Whitham, student labor account.....	120 00
October 7.....	McIlroy & Co., experimental station account.....	3,144 78
October 7.....	J. L. Cravens, experimental station account.....	125 00
October 11.....	C. H. Leverett.....	62 50
October 13.....	R. A. Beard, tuition refunded.....	2 00
October 13.....	J. A. Gray, miscellaneous account.....	2 00
October 23.....	Pitkins & Mayes, miscellaneous account.....	1 50
October 25.....	J. R. Martin, janitor.....	3 50
October 25.....	John T. Hackett, library deposit.....	2 00
November 5.....	J. W. Queen & Co., miscellaneous account.....	40 33
November 5.....	W. R. Hervey, miscellaneous account.....	37 50
November 6.....	J. M. Whitham, student labor.....	120 00
November 6.....	C. D. Bates, janitor.....	4 00
November 6.....	W. W. McCart, miscellaneous.....	9 50
November 6.....	W. W. McCart, janitor.....	30 00
November 8.....	J. McNeill, library.....	65 80
November 10.....	Robt. Guillaums, janitor.....	5 85
November 11.....	Will Guillaums, janitor.....	4 50
November 15.....	J. R. Martin, janitor.....	3 50
November 18.....	Henry Seibert & Bro., miscellaneous.....	16 00
November 18.....	W. J. Hamilton, library department account.....	1 90
November 21.....	J. L. Cravens, miscellaneous.....	8 90
November 21.....	J. L. Cravens, postage.....	40 00
November 21.....	W. P. Thomas, miscellaneous.....	5 00
November 25.....	W. F. Bates, farm.....	18 65

CURRENT EXPENSE ACCOUNT—*Concluded.*

1890.		
November 25....	By amount W. French, salary.....	\$ 50 00
November 25....	W. F. Bates, student labor.....	79 60
November 25....	G. C. Schoff, student labor.....	120 00
November 26....	W. French, repairs.....	6 00
November 26....	Smith & Williams, repairs.....	12 60
November 26....	J. T. Valentine, library deposit account.....	2 00
November 28....	J. D. Van Winkle, stationery bill.....	7 25
November 28....	W. R. McIlroy, experimental station.....	3,288 64
November 28....	J. H. Moore, library deposit account.....	2 00
1890.		
November 30....	By amount balance in Treasury.....	9,610 58
		<u>\$ 54,169 67</u>

BIENNIAL REPORT

— OF THE —

President of the Arkansas Industrial University

— TO THE —

HONORABLE BOARD OF TRUSTEES.

ARKANSAS INDUSTRIAL UNIVERSITY,
NOVEMBER 29, 1890.

To the Honorable Board of Trustees of the Arkansas Industrial University:

GENTLEMEN: The two years now closing mark an era gratifying to the friends of the University.

During your administration the institution has enjoyed the largest patronage in its history. Within the last three years the attendance has nearly doubled, and at the present time reaches over six hundred students, and this, too, notwithstanding the disadvantages under which you have labored.

The above has reference to the Departments at Fayetteville. We are pleased to notice a prosperous condition of the Medical Department at Little Rock and the Branch Normal College at Pine Bluff.

Our building will accommodate one thousand students, and in our opinion a few changes in the law would give us this number.

The means at your disposal have been inadequate to the work desired. You have lost several of your most valuable

officers on account of small salaries. In every instance these men have obtained better pay in other colleges. Can the State afford to suffer such losses? The law of supply and demand is applicable here as elsewhere. The number of first class teachers is limited, and the demand is increasing. The accompanying list will show the salaries paid by other State Colleges, and while our University ranks many of them in courses of study, etc., the salaries of our officers are below the average.

Statistics show that the experience of other colleges is against compulsory student labor. Some of our best schools have tried the experiment and found it to be a failure. But few now require it. All work here should be educational, and enforced only so far as this object applies and for so long a time as the purpose demands. I conceive the design of manual labor in school to be threefold, and would respectfully recommend that it be arranged accordingly :

1. Labor should be required of all preparatory students as a suitable exercise to follow after the proper interval the work of the kindergarten in training the senses and the judgment. The hand and the eye must be here used as the organs of perception, and the mind to make nice discriminations, besides the imagination quickened in forming new constructions. The power of invention is hereby developed. These are facts recognized in the best schools of Germany and, later, in France. The public schools of some of our large cities are adding mechanical departments for this educational purpose. One of our young officers has just been called to Chicago to take charge of work in the machine shops of the public schools at twice the salary received for similar duties here.

2. Labor may be required in school as a substitute for the old apprenticeship system in learning a mechanical trade, such as Carpentry, Masonry, etc. Our Superintendent of Mechanic Arts well recommends the establishment of such a course in his department. Many a poor boy can be enabled to become a skilled workman and thus turn his training into money.

3. Labor should be exacted of students in the practical

part of professional courses, such as Engineering, Agriculture, Horticulture, etc. This class of work should succeed the general training of the first class, and should be divided among the laboratory, field and shops in the appropriate college courses.

By the above arrangement you observe the work is educational throughout, and is not exacted for labor *per se*. The time can be adjusted to allow the necessary theoretical part to occupy its proper place, and the whole be made to harmonize. While a large majority of colleges make labor optional, I would insist upon all classes of preparatory students having from one and a half to two hours work per day on the principle first mentioned.

We believe the history of our Agricultural and Mechanical College shows errors in two extremes, namely, the first, of having no systematic labor but a literary institution with only the name of A. and M. College; secondly, of introducing labor without a systematic arrangement but for the sake of work exacted to overcome prejudice caused by the first error. At this time a much better state of things exists. We can profit by experience. The American Association of Agricultural Colleges and Experimental Stations is doing excellent work in devising the best methods and means to accomplish the objects of the law. In concert of action there is much strength.

I beg to state that the foregoing conclusions are reached after extensive correspondence with the Presidents of nearly all the leading colleges of the country, the gathering of statistics, personal observation and careful study.

In every instance the student should be engaged in the practical work under the guidance of an expert; he should seek reasons from both instructor and books, make his deductions and apply the principles to new cases. He should be taught to express his thoughts in drawing, writing and speaking, thereby fixing them in logical order and causing them to be indelibly impressed upon the mind and rendering his knowledge useful to others. Thus his learning would be empirical, scientific, and practical. If he studies Mechanics, he should pursue this method;

his course in Agriculture and other subjects should conform to the same law. By this plan he would graduate an expert in his chosen course. Our rich natural resources need development in the lines of Agriculture, Horticulture, Mechanics, Engineering, Mining, etc., and this University is a good investment in this direction.

It is unnecessary to call your attention to the fact that the business of the State calls for men in other fields, and the broad provision of the organic law of the University enables us to prepare them for every calling.

The means at your disposal have been largely increased by the recent munificent grant of Congress provided for by the Act known as the "Morrill Bill," a supplementary measure to that known as the "Land Grant Act of 1862" by the same author. However, it exacts restrictions preventing the use of money for buildings, lands and other permanent improvements, yet all these are necessary for the best interest of the institution. If fine stock is to be raised, meadows and fields must be provided. For an Agricultural College to buy grain and hay is neither economical nor consistent with propriety. Here at the Dormitory we have a market for beef, butter, milk, vegetables, etc., and our boys should have these things at the lowest price. The Agricultural College of a neighboring State has slaughtered hundreds of beeves annually, run a creamery and shipped butter at a profit. The sales of "blooded" cattle is a marked feature of the institution. This is done in a country to which hay and corn was formerly imported. Why can not even better results be accomplished in our country, which is naturally adapted to grain and grasses? We need the land and means.

The principles cited for the boys are equally applicable to the girls. These should be taught every industry suitable to women, such as cutting and fitting, sewing and many other arts. This has been recommended in nearly all my former reports from this office. In the first place, the young ladies need a suitable home, a building properly constructed and under the supervision of a good and experienced matron. Our people hesitate to send their daughters to board among strangers.

A Business College should be established and properly equipped with teachers and apparatus. Both sexes would turn the training received into money. Experts should here teach all the commercial arts and sciences given by the best business colleges. Book-keeping, telegraphy, stenography, etc., would be pursued.

DEPARTMENTS.

With a brief statement concerning some of the Departments I respectfully refer you to fuller reports of their respective Superintendents.

AGRICULTURAL DEPARTMENT.

The enrollment in the Agricultural course has been larger than that of many other Agricultural Colleges. The want of land of arable character has prevented a full development. We need model fields, orchards and gardens, cultivated under the direct supervision of experienced men. Orchards in every stage of growth, vineyards and "truck" farms, should serve as models for students in the first few years of the course. Boys have neither time nor experience for experimenting until they have reached the higher classes, but should learn the very best methods proven. After this the Experiment Station serves a valuable purpose for original research. Commissioner Harris has well compared the Experimental Station work to laboratory practice in Universities; the college work proper is complete before this stage is reached. It is well stated by the Superintendent that boys of the Preparatory classes should be taught Agriculture. I have insisted that this work should be done.

Girls as well as boys should see the work of model gardens. Floriculture is a source of much revenue near large cities. The useful and aesthetic are here combined. To work with nature develops the being, physically, intellectually and morally.

MECHANIC ARTS AND ENGINEERING.

Results are the best tests of work. The shops, drawing room and engineering departments can show favorable products.

The new shop building is a credit to the head of the depart-

ment and to the students who did much in its construction. It accommodates about eighty students and has been occupied to its full capacity. While it has many fine machines, it still needs a few more, among which is a testing machine. An "annex" should be built for testing apparatus and an engine room.

BIOLOGY AND GEOLOGY.

Professor Jerome McNeil succeeds Professor Simonds as head of this department. His election is subject to the approval of the Honorable Board. He makes important suggestions regarding the Museum, etc., and I respectfully commend them to your favorable consideration.

ANCIENT CLASSICS.

There is great demand for ancient languages, and much interest is taken in the efficient work of the Professor in charge. His whole time is occupied; surely his pay should be that of other Professors.

ENGLISH AND MODERN LANGUAGES.

Professor Fletcher fills the chair vacated by Professor Edwards. His election is subject to the approval of the full Board. The Department has been crowded several years. The chair should be divided or an assistant appointed. Professor Droke now teaches the class in Anglo-Saxon. We need a teacher of German.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

Lieutenant Cabell was detailed in July to succeed Lieutenant Fletcher, whose time expired. Professor Cabell has voluntarily taken upon himself the duties of Commandant and has proven to be a valuable officer. All male students are required to drill. The Department has not been allowed a sufficient number of hours for thorough military training. The new

equipments requested are much needed. The General Government will furnish arms and accoutrements free of charge, if the required bond for twice their value is duly furnished.

THE NORMAL DEPARTMENT.

Two young ladies complete the course this year. The demand for the best teachers continues to increase. Letters on file in this office show that our people are willing to pay good salaries to graduates of this institution. We cannot supply the demand. Our Normal Department is doing good work, and it should be encouraged, and the Professor given the rank and pay of other heads of departments.

THE PREPARATORY DEPARTMENT.

The large classes and irregular attendance have materially interfered with the work. Many of our students are not financially able to continue through the session, but must stop and teach or do other work in order to defray expenses.

Professor Droke having been given some of the college work in the English Department, it became necessary to temporarily employ an assistant. Miss Leverett was chosen. She has done good work.

IMPROVEMENTS.

Substantial improvements are needed for the following purposes :

1. Repairs of the main building in the way of painting, plastering, black-boards, etc., are necessary. The building is remarkably well preserved. Several years have passed since any repairs of much consequence were made. The heating apparatus needs overhauling, but this can be done by the engineer during vacation.

2. The Dormitory should be enlarged by the addition of a dining-room, kitchen, bath rooms and sleeping rooms, so as to accommodate about two hundred students.

3. Water works would contribute much to comfort, health, and protection from fire. As stated in my last biennial report, we are sadly in need of a larger and better water supply.

DRAINAGE.

4. While we have an elevated campus and naturally good drainage, yet it is not sufficient sanitary protection. A complete sewer system should be constructed.

WALKS AND DRIVES.

5. The lack of funds has prevented the making of suitable roadways. The campus, while naturally fine, lacks the conveniencies and ornamentation becoming the grounds of the State University.

DORMITORY AND BOARDING HOUSE FOR YOUNG LADIES.

6. This is one of the greatest needs of the University, for reasons before mentioned. Our tax-payers have daughters as well as sons to educate, and the two sexes should have equal advantages.

COMMERCIAL COLLEGE.

7. Rooms and apparatus should be provided for a Commercial Department. This can be done at a little more than the cost of materials, since nearly all the work can be performed in the machine shops and by students labor.

HEATING THE BUILDINGS.

8. New boilers and a new boiler house should be supplied and the heating apparatus extended to the Dormitory.

9. The Library and Reading Room need new furniture and equipments.

LAUNDRY.

10. A steam laundry could be added at a small cost.

For estimates, please see appendix.

We are pleased to report to your Honorable Body that, notwithstanding the many changes in officers and the irregular attendance on the part of students, the University moves along with remarkable smoothness, free from friction and disturbing elements, making satisfactory progress in scholarship and deportment.

I have the honor to be, most respectfully,

Your obedient servant,

E. H. MURFEE,

President.

ESTIMATES, APRIL 1, 1891, TO MARCH 31, 1893.

FOR SALARIES.

President.....	\$ 4,000 00
Superintendent Mechanical Department.....	3,200 00
Superintendent Agriculture.....	3,200 00
Professor of English Literature &c.....	3,000 00
Professor of Biology and Geology.....	3,000 00
Professor of Mathematics.....	3,000 00
Adjunct Professor Ancient Languages.....	2,600 00
Adjunct Professor Mechanic Arts.....	2,000 00
Adjunct Professor Chemistry.....	2,000 00
Instructor in Pedagogics and Senior Assistant.....	2,600 00
Five Assistants Preparatory Department, \$800 each per annum.....	8,000 00
Three Assistants Mechanical Department, \$600 each per annum.....	3,600 00
Instructor in Field Engineering (student).....	400 00
Foreman of Farm.....	1,200 00
Engineer.....	1,200 00
One Assistant Department English Literature.....	2,000 00
One Assistant Department Biology and Geology.....	1,000 00
Private Secretary to President.....	500 00
Secretary and Treasurer of the Board.....	1,000 00
	\$ 47,500 00

TO INCREASE SALARIES FOR TWO YEARS.

President.....	\$ 1,000 00
Superintendent Agriculture.....	800 00
Superintendent Mechanical Department.....	800 00
Professor English Literature.....	1,000 00
Professor Biology and Geology.....	1,000 00
Professor Mathematics.....	1,000 00
Adjunct Professor Ancient Languages.....	400 00
Instructor Pedagogics.....	400 00
Assistants in Preparatory Department.....	800 00
Assistants in Mechanical Department.....	1,600 00
Assistant Farm Instruction.....	1,200 00
	\$ 10,000 00

FOR ALL OTHER PURPOSES.

To pay for student labor.....	\$ 7,000 00
To pay for fuel.....	1,000 00
For maintenance Biology and Geology.....	500 00
For maintenance Mechanical Department.....	1,500 00
For maintenance Farm.....	1,000 00
To pay janitors.....	1,200 00
To purchase books for Library.....	1,000 00
For postage.....	300 00
Painting, calcimining and repairs to building.....	2,500 00
For stationery and printing.....	500 00
Trustees and expense of Board meetings.....	1,500 00
Contingent Fund.....	2,000 00
Material for improvement of Library.....	400 00
Material and labor for enlarging and improving Museum.....	1,600 00
Material for illustrating Natural Science.....	500 00
For Botanical Garden.....	100 00
For Botanical Laboratory.....	150 00
Enlargement of Chemical Laboratory.....	1,500 00
Equipment of Physical Laboratory.....	2,500 00
Establishment of Trade Schools.....	6,000 00
For new machines, Mechanical Department.....	2,000 00
Addition to Dormitory for culinary, dining room, laundry and bath room purposes.....	5,000 00
For New Dormitory for girls.....	20,000 00
For three cisterns.....	500 00
For insurance for five years.....	3,300 00
For improvement of the Campus.....	3,000 00
	\$ 66,850 00

RECAPITULATION.

For salaries.....	\$ 47,500 00
To increase salaries.....	10,000 00
All other purposes.....	66,850 00
	\$ 124,350 00

ESTIMATES FOR MAINTENANCE.

For maintenance fund for two years from April 1, 1891, to March 31. 1893.....	\$ 69,450 00.
Less interest on bonds of Washington county and city of Fayetteville for two years.....	20,800 00
Amount to be supplied.....	\$ 48,650 00.
Add estimate for special appropriation.....	54,900 00
Total Appropriation asked for.....	\$ 103,550 00

ESTIMATES FOR BRANCH NORMAL COLLEGE, PINE BLUFF.

Repairing building and grounds.....	\$ 600 00
Purchasing books for library.....	300 00
Purchasing apparatus for use in class room.....	500 00
One principal and four assistant teachers.....	7,200 00.
Fuel.....	300 00
Insurance on building.....	500 00.
To further furnish the dormitory.....	1,000 00.

REPORT

— OF —

J. L. CRAVENS, Secretary and Treasurer

— OF THE —

BOARD OF TRUSTEES

— OF THE —

ARKANSAS INDUSTRIAL UNIVERSITY.

December 1, 1888 to November 30, 1890.

SALARY ACCOUNT.

December 1, 1888 To amount of Estimate.....	\$31,434 00	
To amount Expended.....		\$19,970 09
December 1, 1889—By amount balance unexpended.....		\$11,463 91
		<hr/>
		\$31,434 00

FARM ACCOUNT.

To amount forwarded December 1 1888.....	\$25 31	
To amount estimated.....	\$500 00	
To amount receipts from Farm.....	\$989 86	
By amount expended.....		\$1,331 56
December 1, 1889—By amount balance unexpended.....		\$183 61
		<hr/>
		\$1,515 17

STUDENT LABOR ACCOUNT.

To amount forwarded December 1, 1888.....	\$3,184 36	
To amount State appropriation	\$5,000 00	
To amount returned by Prof. Whitham.....	\$57 00	
By amount expended.....		\$4,798 70
December 1, 1889—By balance unexpended.....		\$3,442 66
	\$8,241 36	\$8,241 36

BIOLOGY ACCOUNT.

To amount of estimate.....	\$162 00	
By amount expended.....		\$12 75
December 1, 1889—By amount balance unexpended.....		\$145 25
		\$162 00

POSTAGE ACCOUNT.

To amount of estimate.....	\$182 00	
By amount expended.....		\$86 12
December 1, 1889—By amount balance unexpended.....		\$95 88
		\$182 00

LIBRARY ACCOUNT.

To amount of estimate.....	\$ 100 00	
By amount expended.....		\$ 100 04
December, 1889—To amount overdrawn.....	04	
	\$ 130 04	\$ 100 04

FUEL ACCOUNT.

To amount of estimate.....	\$ 550 00	
By amount expended.....		\$ 463 79
December, 1889—By amount balance unexpended.....		86 21
		\$ 550 00

CLERK TO PRESIDENT.

December, 1889—By amount paid Miss Pace.....		\$ 69 45
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LIBRARY DEPOSIT ACCOUNT.

To amount balance last report, December, 1888.....	\$ 6 85
To amount received from sundry students	38 00	.....
By amount refunded to students.....		\$ 23 00
December, 1889—By amount balance in treasury.....		21 85
	\$ 44 85	\$ 44 85

REPAIRS ACCOUNT.

To amount of estimate	\$ 150 00	.....
By amount expended.....		\$ 25 90
December, 1889—By amount balance unexpended.....		124 10
		\$ 150 00

ROOF ACCOUNT.

To amount balance last report.....	\$ 221 60	.....
By amount expended.....		\$ 210 00
December, 1889—By amount balance in treasury.....		11 60
		\$ 221 60

EXPERIMENT STATION.

To amount of error July 25, 1888.....	\$ 36 00	.....
To amount U. S. Treasurer.....	15,000 00	.....
By amount from last report.....		\$ 1,607 20
By amount expended.....		13,715 55
December, 1889—To amount overdrawn.....	286 85	
	\$ 15,322 85	\$ 15,322 85

STATIONERY AND PRINTING ACCOUNT.

To amount of estimate.....	\$ 160 00	.....
By amount expended		\$ 133 72
December, 1889—By amount balance unexpended.....		26 28
		\$ 160 00

MECHANICAL DEPARTMENT ACCOUNT.

To amount of estimate.....	\$ 700 00	.....
To amount of Professor Whitham.....	9 60	.....
By amount expended.....		\$ 704 60
By amount balance unexpended.....		5 60
	\$ 709 60	\$ 709 60

MISCELLANEOUS ACCOUNT.

To amount of estimate.....	\$ 2,567 87	.....
To amount of Professor Edwards.....	13 30	.....
To amount of Professor Murfee.....	13 75	.....
To amount of George M. Edgar.....	30 70	.....
By amount expended.....		\$ 1,853 43
December, 1889—By amount balance unexpended.....		772 19
	\$2,625 00	\$2,625 00

TRUSTEES ACCOUNT.

To amount of estimate.....	\$ 986 00	.....
By amount expended.....		\$ 522 20
By amount balance unexpended.....		463 80
		\$ 986 00

JANITOR ACCOUNT.

To amount of estimate.....	\$ 725 00	.....
By amount expended.....		\$ 548 95
December, 1889—By amount balance unexpended.....		176 05
		\$ 725 00

SHOP BUILDING ACCOUNT.

To amount State appropriation.....	\$ 5,000 00	.....
By amount expended.....		\$ 5,000 00

INSURANCE ACCOUNT.

To amount on hand December, 1888.....	\$ 1 21	.....
To amount State appropriation.....	3,000 00	.....
By amount expended.....		\$ 2,799 45
December, 1889—By amount balance in treasury.....		201 76
	\$ 3,001 21	\$ 3,001 21

CURRENT EXPENSE ACCOUNT.

1888.	To amount balance on hand December 1, 1888.....	\$ 9,547 62
	to correct error July 21, 1888.....	36 00
	cash of A. E. Menke.....	92 73
December 3.....	W. F. Bates.....	23 01
December 8.....	W. F. Bates.....	7 55
December 9.....	A. E. Menke.....	103 75
December 21.....	W. F. Bates.....	10 00
1889.		
January 21.....	U. S. Treasurer, experimental station.....	3,750 00
February 4.....	W. F. Bates.....	20 00
February 7.....	H. Edwards.....	13 30
March 29.....	U. S. Treasurer, experimental station.....	3,650 00
April 3.....	Washington county.....	4,000 00
April 9.....	E. H. Murfee.....	13 75
April 13.....	A. E. Menke.....	10 50
April 13.....	J. M. Whittham.....	7 15
April 23.....	State Treasurer, current expense.....	10,000 00
May 2.....	State Treasurer, insurance.....	3,000 00
May 2.....	Bates.....	10 00
May 2.....	J. M. Whittham.....	11 30
May 8.....	U. S. Treasurer, experimental station.....	100 00
May 8.....	State Treasurer, shop building.....	5,000 00
June 10.....	State Treasurer, current expense.....	1,500 00
July 1.....	U. S. Treasurer, experimental station.....	3,750 00
July 10.....	Washington county.....	4,000 00
August 17.....	Tuition.....	1,841 15
August 17.....	Music tuition.....	342 77
August 17.....	Bates & Menke.....	427 60
August 17.....	J. M. Whittham.....	37 25
August 19.....	City of Fayetteville.....	2,686 85
September 2.....	State Treasurer, student labor.....	3,000 00
September 30.....	U. S. Treasurer, experimental station.....	3,750 00
October 9.....	A. E. Menke.....	51 80
October 14.....	E. S. Richman.....	6 00
October 14.....	W. F. Bates.....	20 00
October 19.....	State Treasurer, student labor.....	2,000 00
October 28.....	A. E. Menke.....	55 80
November 8.....	Geo. M. Edgar.....	30 70
November 9.....	J. M. Whittham.....	10 90
November 15.....	Tuition.....	316 68
November 15.....	Sundry students, library deposit.....	38 00
November 15.....	W. F. Bates.....	16 00
November 26.....	A. E. Menke.....	60 00
November 29.....	A. E. Menke.....	53 60
November 29.....	W. F. Bates.....	31 50
		\$ 63,433 25

CURRENT EXPENSE ACCOUNT—*Continued.*

1889.		
December 1.....	By amount J. M. Whitham, student labor account.....	\$ 40 00
December 2.....	J. M. Whitham, student labor account.....	28 00
December 2.....	Ida Pace, salary.....	15 00
December 2.....	Ida Pace, salary.....	44 50
December 2.....	Smith & Ash, bill.....	1 75
December 2.....	C. Dale, bill.....	6 60
December 3.....	J. L. Millsap, farm account.....	30 65
December 3.....	W. French, labor.....	40 00
December 3.....	A. Volner, bill.....	10 75
December 3.....	Gregg & Smith, bill.....	7 95
December 4.....	S. J. Jones, experiment station account.....	6 15
December 5.....	D. C. Aiken, student labor account.....	7 50
December 6.....	W. French.....	4 50
December 7.....	J. P. Marbut, bill.....	4 13
December 7.....	J. W. Keese, trustee account.....	60 90
December 8.....	W. F. Avera, trustee account.....	60 40
December 8.....	W. M. Fishback, trustee account.....	29 90
December 8.....	S. P. Hughes, trustee account.....	23 20
December 8.....	A. E. Menke, experiment station account.....	8 80
December 8.....	W. W. McCart, janitor.....	5 50
December 8.....	W. H. Murfee.....	1 60
December 8.....	W. B. Welch, trustee account.....	12 50
December 8.....	W. French.....	4 95
December 11.....	E. B. Harrison, bill.....	26 00
December 11.....	C. Dale, bill.....	46 70
December 11.....	Flachman & Mathews, bill.....	22 97
December 12.....	E. H. Murfee.....	85
December 12.....	McIlroy & Co., student labor account.....	82 00
December 12.....	McIlroy & Co., farm account.....	22 50
December 12.....	McIlroy & Co., experiment station account.....	42 27
December 12.....	Washington County Bank.....	134 50
December 12.....	W. F. Bates, farm account.....	13 00
December 12.....	H. Jackson, library deposit account.....	2 00
December 14.....	J. M. Whitham.....	3 75
December 14.....	G. A. Humphreys, experiment station account.....	30 00
December 15.....	W. F. Bates, farm account.....	17 25
December 17.....	Taylor Bros., farm account.....	2 10
December 17.....	Lantrip & Miller, farm account.....	11 90
December 17.....	A. E. Menke, experiment station account.....	49 85
December 17.....	J. L. Cravens, experiment station account.....	10 75
December 20.....	G. V. Skelton, farm labor.....	12 00
December 21.....	W. F. Bates, farm account.....	7 70
December 21.....	W. F. Bates, experiment station account.....	120 00
December 21.....	W. H. Murfee, messenger.....	1 50
December 24.....	McIlroy & Co., experiment station account.....	64 89
December 27.....	A. E. Menke, experiment station account.....	400 00
December 27.....	A. E. Menke, salary.....	200 00
December 27.....	Mac Devin, experiment station account.....	30 00
December 28.....	E. H. Murfee, salary.....	500 00
December 28.....	E. H. Murfee, miscellaneous account.....	100 00
December 28.....	Stephens Lithograph & Engraving Co.....	47 75
December 31.....	J. M. Whitham, salary.....	400 00
December 31.....	H. Edwards, salary.....	375 00
December 31.....	F. W. Simonds, salary.....	375 00
December 31.....	J. F. Howell, salary.....	300 00
December 31.....	W. E. Anderson, salary.....	250 00
December 31.....	S. S. Twombly, salary.....	125 00
December 31.....	C. H. Leverett, salary.....	250 00
December 31.....	O. C. Gray, salary.....	375 00
December 31.....	G. W. Broke, salary.....	200 00
December 31.....	A. Waggener, salary.....	200 00
December 31.....	J. C. Masie, salary.....	200 00
December 31.....	N. J. Williams, salary.....	200 00
December 31.....	K. V. King, salary.....	50 00
December 31.....	C. B. Lyon, salary.....	200 00
December 31.....	J. W. Mayo, salary.....	150 00
December 31.....	W. F. Bates, salary.....	150 00
December 31.....	P. H. Babb, salary.....	150 00
December 31.....	J. L. Cravens, salary.....	125 00
December 31.....	Lee Treadwell, salary.....	50 00
December 31.....	W. W. McCart, janitor.....	30 00
December 31.....	W. C. Cardwell, stationery bill.....	8 05

1889.

January 1.....	Lantrip & Miller, experiment station account.....	3 50
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CURRENT EXPENSE ACCOUNT.—*Continued.*

1889.		
January 1.....	By amount S. S. Twombly, experiment station account.....	\$ 250 00
January 1.....	C. W. Woodworth, experiment station account.....	300 00
January 2.....	E. S. Richman, experiment station account.....	250 00
January 2.....	D. B. Jobe, experiment station account.....	2 00
January 2.....	J. L. Cravens, experiment station account.....	125 00
January 2.....	R. R. Dinwiddie, experiment station account.....	250 00
January 2.....	Smith & Ash, bill.....	3 15
January 3.....	R. T. Smith, experiment station account.....	2 95
January 5.....	E. L. Fisher, bill.....	2 00
January 7.....	Mellroy & Co., experiment station account.....	463 00
January 7.....	Mellroy & Co., farm account.....	20 85
January 8.....	E. Z. Davies, bill.....	1 82
January 8.....	H. K. Wade, bill.....	70
January 9.....	E. L. Fisher, bill.....	1 00
January 9.....	W. F. Bates, farm account.....	9 00
January 12.....	Bertha Trott, library deposit account.....	2 00
January 12.....	W. F. Bates, farm account.....	21 16
January 14.....	H. Edwards, miscellaneous account.....	40 00
January 14.....	Alice Polson, salary.....	14 80
January 21.....	W. H. Murfee, messenger.....	3 00
January 22.....	H. Edwards, miscellaneous account.....	40 20
January 26.....	W. F. Bates, farm account.....	7 50
January 31.....	F. W. Simonds, bill.....	6 00
January 31.....	S. J. Young, bill.....	1 25
February 1.....	J. L. Bozarth, bill.....	2 80
February 1.....	W. H. Murfee, bill.....	1 50
February 1.....	Benbrook & Co., bill.....	1 70
February 1.....	Curry & Co., bill.....	1 50
February 1.....	D. C. Aiken, bill.....	5 00
February 1.....	Washington County Bank, farm.....	7 68
February 1.....	H. K. Wade, express.....	2 95
February 2.....	Bob Buchanan.....	1 00
February 4.....	Taylor Bros., bill.....	1 85
February 4.....	W. F. Bates, farm account.....	21 40
February 4.....	W. W. McCart, janitor.....	30 00
February 5.....	Jas. Marbut, bill.....	3 35
February 6.....	W. W. McCart, bill.....	39 70
February 11.....	H. K. Wade, express.....	1 35
February 12.....	S. E. Marrs, printing.....	1 00
February 14.....	J. P. Marbut, bill.....	5 75
February 15.....	W. H. Murfee, messenger.....	1 50
February 16.....	H. K. Wade, express.....	13 60
February 16.....	H. K. Wade, express.....	3 05
February 16.....	Sam Y. Morrow, bill.....	1 90
February 22.....	W. F. Bates.....	4 95
February 22.....	Patridge & Reagan, printing.....	5 00
April 1.....	C. W. Woodworth, experiment station account.....	300 00
April 1.....	R. R. Dinwiddie, experiment station account.....	250 00
April 1.....	J. L. Cravens, experiment station account.....	125 00
April 2.....	W. French, salary.....	52 00
April 2.....	Mellroy & Co., experiment station account.....	1,550 86
April 3.....	W. W. McCart, janitor.....	60 00
April 3.....	E. H. Murfee, salary.....	500 00
April 3.....	J. M. Whitham, salary.....	400 00
April 3.....	A. E. Menke, salary.....	200 00
April 3.....	O. C. Gray, salary.....	375 00
April 3.....	H. Edwards, salary.....	375 00
April 3.....	F. W. Simonds, salary.....	375 00
April 3.....	J. F. Howell, salary.....	300 00
April 3.....	C. H. Leverett, salary.....	250 00
April 3.....	W. E. Anderson, salary.....	250 00
April 3.....	S. S. Twombly, salary.....	125 00
April 3.....	G. W. Droke, salary.....	200 00
April 3.....	A. M. Wagener, salary.....	200 00
April 3.....	N. J. Williams, salary.....	200 00
April 3.....	J. C. Massie, jr., salary.....	200 00
April 3.....	C. B. Lyon, salary.....	200 00
April 3.....	J. W. Mayo, salary.....	150 00
April 3.....	W. F. Bates, salary.....	150 00
April 3.....	P. H. Babb, salary.....	150 00
April 3.....	K. V. King, salary.....	50 00
April 3.....	J. M. Whitham, salary account.....	50 00
April 3.....	Ida Pace, salary.....	69 45
April 3.....	A. E. Menke, experiment station account.....	400 00
April 4.....	A. E. Menke, experiment station account.....	19 80
April 4.....	Wm. Corle, experiment station account.....	30 00

CURRENT EXPENSE ACCOUNT—Continued.

1889.		
April 4.....	By amount J. L. Cravens, salary.....	\$ 125 00
April 11.....	J. M. Whitham, student labor account.....	111 77
April 12.....	A. E. Menke, student labor account.....	186 25
April 12.....	W. H. Murfee, messenger.....	3 75
April 12.....	Howard Murfee, messenger.....	3 15
April 13.....	R. R. Dinwiddie, experiment station.....	30 20
April 13.....	Mellroy & Co., experiment station.....	913 61
April 15.....	Manning Murfee.....	60
April 16.....	J. L. Cravens, experiment station account.....	3 00
April 19.....	S. S. Twombly, salary.....	20 83
April 19.....	E. M. Reed, janitor.....	4 50
April 22.....	E. Richman, experiment station.....	4 80
April 23.....	R. T. Smith, experiment station.....	1 80
May 1.....	R. T. Smith, farm account.....	5 25
May 1.....	T. S. Anderson, farm account.....	14 47
May 1.....	A. E. Menke, student labor account.....	254 36
May 1.....	W. W. McCart, janitor.....	30 00
May 1.....	E. B. Harrison, roof account.....	60 00
May 1.....	J. M. Whitham, bill.....	9 98
May 2.....	W. French, salary.....	40 00
May 2.....	A. Byrnes, farm account.....	5 00
May 2.....	W. F. Bates, fuel account.....	15 00
May 2.....	W. W. Crenshaw, farm account.....	2 00
May 2.....	F. E. Morrow, janitor account.....	3 50
May 2.....	E. B. Wall, insurance account.....	933 70
May 3.....	S. W. Higginbotham, janitor.....	4 00
May 3.....	H. Edwards, library account.....	9 69
May 3.....	W. M. Simmons, trustee account.....	5 50
May 3.....	J. D. Van Winkle, bill.....	5 20
May 3.....	C. A. Mulholland, bill.....	47 29
May 3.....	S. E. Marrs, printing.....	9 00
May 3.....	C. Dale, fuel account.....	141 55
May 3.....	C. B. Lyon, bill.....	10 34
May 3.....	C. Dale, bill.....	4 50
May 3.....	E. B. Harrison, bill.....	5 70
May 3.....	J. L. Cravens, postage.....	57 00
May 3.....	Lautrip & Miller, bill.....	12 75
May 3.....	C. Dale, bill.....	2 00
May 3.....	J. P. Marbut, farm account.....	57 40
May 3.....	E. M. Reed, janitor.....	4 50
May 3.....	J. D. Washington, janitor.....	10 00
May 3.....	S. W. Higginbotham, janitor.....	4 00
May 4.....	A. Byrnes, bill farm account.....	34 90
May 4.....	E. B. Harrison, bill farm account.....	15 75
May 4.....	W. F. Bates, bill farm account.....	118 85
May 4.....	Moore & Gollahar, bill farm account.....	3 60
May 4.....	J. M. Whitham, student labor account.....	124 10
May 4.....	A. Byrnes, experiment station.....	22 50
May 6.....	J. H. Van Hoose, insurance account.....	1,865 75
May 7.....	Ida Pace, salary.....	41 67
May 7.....	R. W. Smith, shop building account.....	8 75
May 9.....	W. F. Bates, farm account.....	10 30
May 10.....	C. W. Goddard, janitor.....	3 50
May 11.....	W. Beers, farm account.....	76 10
May 13.....	A. B. Lewis, library deposit account.....	2 00
May 16.....	E. H. Murfee, trustee account.....	28 55
May 16.....	J. W. Black, library deposit account.....	2 00
May 20.....	T. M. Hardin, farm account.....	20 00
May 20.....	F. W. Simonds, biology account.....	9 00
May 20.....	A. B. Kell, farm account.....	48 05
May 20.....	P. H. Babb, salary.....	25 00
May 21.....	C. W. Woodworth, experiment station account.....	27 95
May 21.....	E. S. Richman, experiment station account.....	27 40
May 24.....	L. H. Phillips, shop building account.....	24 00
May 27.....	W. F. Avera, trustee.....	20 60
May 27.....	Phillip Flocum, shop building account.....	50 00
May 27.....	J. M. Moore, farm account.....	4 19
May 28.....	Taylor Bros., miscellaneous account.....	4 55
May 28.....	J. A. Burgin, shop building account.....	3 75
May 29.....	W. P. McNair, shop building account.....	102 41
May 29.....	J. M. Whitham, shop building account.....	494 36
May 29.....	J. M. Whitham, miscellaneous account.....	6 59
May 31.....	W. W. McCart, janitor.....	30 00
May 31.....	Howard Murfee, miscellaneous.....	5 25
June 1.....	Patridge & Reagan, printing account.....	4 00
June 1.....	W. French, salary.....	40 00

CURRENT EXPENSE ACCOUNT.—Continued.

1889		
June 1.....	By amount S. W. Higgenbotham, janitor.....	\$ 4 00
June 1.....	Ida Pace, salary.....	41 67
June 1.....	W. P. McNair, shop building account.....	81 85
June 1.....	J. M. Whitham, shop building account.....	563 12
June 3.....	E. M. Reed, janitor.....	8 15
June 3.....	W. French, shop building account.....	24 00
June 3.....	C. W. Goddard, janitor.....	3 50
June 3.....	J. M. Whitham, student labor.....	270 75
June 4.....	W. F. Bates, farm account.....	12 30
June 4.....	J. D. Washington, janitor.....	5 00
June 4.....	A. E. Menke, student labor.....	288 69
June 4.....	L. Gregg, farm account.....	13 08
June 4.....	Phillip Flocum, shop building account.....	308 85
June 5.....	J. P. Marbut, shop building account.....	5 75
June 5.....	S. E. Marrs, printing.....	4 85
June 6.....	C. B. Lyon, salary.....	133 30
June 6.....	L. H. Phillips, shop building account.....	17 30
June 7.....	A. B. Kell, farm account.....	9 00
June 7.....	Benbrook & Co., mechanical department account.....	3 95
June 8.....	Curry & Co., farm account.....	7 70
June 11.....	A. E. Menke, farm account.....	92 27
June 13.....	A. E. Menke, Experiment Station account.....	79 80
June 15.....	Phillip Flocum, shop building account.....	63 88
June 18.....	H. Edwards, library account.....	20 00
June 18.....	S. J. Jones, farm account.....	4 35
June 18.....	S. E. Marrs, printing account.....	3 50
June 21.....	W. H. Whitlow, farm account.....	12 80
June 22.....	S. H. Blackmer, shop building account.....	193 75
June 24.....	W. F. Bates, farm account.....	4 20
June 24.....	Bales & Conner, farm account.....	35 35
June 25.....	J. L. Cravens, expense account.....	18 90
June 27.....	T. L. Morris, shop building account.....	4 00
June 27.....	Mitchell & Bettis, printing.....	9 08
June 27.....	McIlroy & Co., miscellaneous account.....	975 00
June 27.....	K. V. King, salary.....	155 33
June 29.....	Chas. E. Begole, shop building account.....	18 60
June 29.....	A. C. Brisow, roof account.....	109 00
June 29.....	Phillip Flocum, shop building account.....	20 50
June 29.....	E. H. Murfee, salary.....	500 00
June 29.....	J. M. Whitham, salary.....	400 00
June 29.....	A. E. Menke, salary.....	200 00
June 29.....	O. C. Gray, salary.....	375 00
June 29.....	H. Edwards, salary.....	375 00
June 29.....	F. W. Simonds, salary.....	375 00
June 29.....	J. F. Howell, salary.....	300 00
June 29.....	C. H. Leverett, salary.....	250 00
June 29.....	W. E. Anderson, salary.....	250 00
June 29.....	G. W. Droke, salary.....	200 00
June 29.....	A. Wagner, salary.....	200 00
June 29.....	J. C. Massie, jr., salary.....	200 00
June 29.....	N. J. Williams, salary.....	200 00
June 29.....	J. W. Mayo, salary.....	150 00
June 29.....	W. F. Bates, salary.....	150 00
June 29.....	J. L. Cravens, salary.....	125 00
June 29.....	McIlroy & Co., shop building account.....	31 50
June 29.....	A. Byrnes, Experiment Station account.....	5 75
July 1.....	W. W. McCart, janitor.....	30 00
July 1.....	C. W. Wordworth, Experiment Station, account.....	300 00
July 1.....	E. S. Richman, Experiment Station account.....	250 00
July 1.....	Ida Pace, salary.....	41 67
July 1.....	A. E. Menke, farm account.....	48 52
July 1.....	A. E. Menke, student labor.....	344 90
July 1.....	McIlroy & Co., Experiment Station account.....	1,559 66
July 1.....	J. M. Whitham, miscellaneous account.....	7 20
July 1.....	J. M. Whitman, Mechanical Department account.....	2 20
July 1.....	J. M. Whitman, salary account.....	56 66
July 1.....	S. W. Higgenbotham, janitor.....	8 50
July 1.....	McIlroy & Co., Experiment Station account.....	200 00
July 2.....	W. French, salary.....	40 00
July 2.....	W. French, shop building account.....	23 50
July 2.....	A. C. Hoag, salary.....	113 33
July 2.....	A. C. Hoag, shop building.....	29 35
July 2.....	A. E. Menke, Experiment Station account.....	400 00
July 2.....	J. L. Cravens, Experiment Station account.....	125 00
July 2.....	J. M. Whitham, student labor.....	475 35
July 2.....	J. M. Whitham, shop building account.....	36 45

CURRENT EXPENSE ACCOUNT—Continued.

1889.		
July 2.....	By amount H. Murfee, messenger.....	\$ 3 00
July 3.....	Taylor Bros. farm account.....	2 15
July 3.....	S. E. Marrs, Experiment Station account.....	3 00
July 3.....	H. Edwards, library account.....	6 00
July 3.....	John D. Washington, janitor.....	5 00
July 3.....	J. L. Cravens, Experiment Station account.....	21 00
July 5.....	C. W. Goddard, janitor.....	3 50
July 6.....	C. Dale, fuel account.....	307 24
July 6.....	A. E. Menke, Experiment Station.....	2 40
July 6.....	W. P. McNeil, shop building account.....	6 55
July 6.....	C. R. Buckner, farm account.....	11 10
July 8.....	A. C. Bristow, roof account.....	10 00
July 8.....	Smith & A-h, farm account.....	11 10
July 8.....	J. M. Whitham, shop building account.....	59 32
July 8.....	J. M. Whitham, shop building account.....	200 61
July 8.....	J. C. McNeely, salary.....	33 33
July 12.....	Jo Cato, Experiment Station account.....	10 00
July 12.....	I. D. Jones, Experiment Station account.....	1 00
July 15.....	J. M. Whitham, shop building account.....	95 76
July 16.....	C. Dale, shop building account.....	877 00
July 16.....	Wm. Mayes, farm account.....	55 95
July 17.....	Phillip Flocum, shop building account.....	38 30
July 17.....	E. S. Richman, Experiment Station account.....	4 00
July 17.....	A. E. Menke, Experiment Station account.....	3 30
July 20.....	W. R. Millsap, farm account.....	38 67
July 22.....	J. M. Whitham, shop building account.....	17 86
July 23.....	J. H. Williams, farm account.....	5 50
July 23.....	J. M. Whitham, shop building account.....	120 00
July 25.....	C. H. Hewitt, farm account.....	45 77
July 27.....	R. C. McCollum, farm account.....	17 00
July 29.....	A. C. Hoag, shop building account.....	125 60
July 31.....	W. W. McCard, janitor.....	30 00
July 31.....	W. F. Bates, farm account.....	3 85
July 31.....	Howard Murfee, Messenger.....	3 00
August 1.....	W. French, salary.....	40 00
August 1.....	W. French, shop building account.....	51 85
August 1.....	W. F. Bates, student labor account.....	303 11
August 1.....	W. P. McNair, shop building account.....	145 15
August 1.....	J. L. Cravens, Experiment Station.....	5 00
August 2.....	E. B. Harrison, bill miscellaneous account.....	7 90
August 2.....	C. Dale, Experiment Station account.....	80 87
August 2.....	J. M. Whitham, Mechanical Department account.....	159 83
August 2.....	J. M. Whitham, student labor account.....	263 05
August 2.....	J. M. Whitham, shop building account.....	401 74
August 2.....	S. W. Higginbotham, janitor.....	8 50
August 2.....	C. A. Mulholland, bill stationery account.....	12 60
August 3.....	T. J. Bond, Experiment Station account.....	14 25
August 3.....	Ida Pace, salary.....	41 66
August 3.....	E. B. Harrison, farm account.....	35 50
August 5.....	Patridge & Reagan, printing.....	2 00
August 5.....	R. T. Smith, farm account.....	8 80
August 8.....	McIlroy & Co., shop building account.....	186 84
August 9.....	A. E. Smith, Experiment Station account.....	1 06
August 9.....	McIlroy & Co., shop building account.....	32 50
August 12.....	J. D. Washington, janitor.....	8 51
August 13.....	J. J. Hedges, shop building account.....	2 50
August 14.....	W. H. Marion, Experiment Station account.....	30 75
August 14.....	W. F. Bates, farm account.....	3 65
August 16.....	W. R. Lanier, shop building account.....	12 00
August 16.....	N. M. Green, repair account.....	4 00
August 17.....	A. E. Menke, Experiment Station account.....	56 30
August 17.....	J. P. Marbut, farm account.....	35 65
August 19.....	J. M. Whitham, shop building account.....	91 60
August 19.....	David Totts, janitor.....	3 50
August 24.....	J. W. Mayo, salary.....	100 00
August 26.....	J. M. Whitham, shop building account.....	51 55
August 26.....	J. M. Whitham, miscellaneous account.....	2 55
August 27.....	E. H. Murfee, miscellaneous account.....	40 00
August 27.....	McIlroy & Co., shop building account.....	63 65
August 27.....	McIlroy & Co., shop building account.....	308 96
August 27.....	J. M. Whitham, student labor account.....	193 25
August 27.....	J. C. McNeely, salary.....	33 35
August 28.....	McIlroy & Co., student labor account.....	247 59
August 29.....	J. W. Keese, trustee.....	76 15
August 29.....	James Mitchell, trustee.....	41 10
August 29.....	J. P. Eagle, trustee.....	29 00

CURRENT EXPENSE ACCOUNT—Continued.

1889.

August 29	By amount	W. H. Langford, trustee.....	54 70
August 30.....		W. F. Bates, farm account.....	3 75
August 31.....		J. M. Whitham, Mechanical Department account.....	67 62
August 31.....		W. M. Fishback, trustee.....	29 40
August 31.....		Hunter Murfee, messenger.....	5 00
August 31.....		John Whitten, janitor.....	9 40
September 2.....		W. French, Mechanical Department account.....	39 85
September 2.....		W. French, miscellaneous account.....	6 00
September 2.....		W. French, salary.....	40 00
September 2.....		Patridge & Reagan, printing.....	4 00
September 2.....		W. F. Bates, student labor account.....	41 30
September 2.....		C. B. Lyon, miscellaneous account.....	70 00
September 2.....		J. M. Whitham, student labor.....	45 80
September 2.....		W. B. Welch, trustee.....	10 00
September 2.....		Robert Boyd, janitor account.....	5 70
September 2.....		Fred Morrow, janitor account.....	16 40
September 3.....		A. F. Howard, farm account.....	33 75
September 3.....		S. B. Scott, janitor account.....	5 00
September 3.....		Ida Pace, salary.....	41 66
September 3.....		W. W. McCart, janitor.....	30 00
September 3.....		W. E. Brandon, janitor.....	6 00
September 3.....		E. C. Anderson, janitor.....	2 90
September 4.....		W. F. Bates, farm account.....	31 00
September 4.....		T. T. Varner, janitor account.....	9 00
September 4.....		D. E. Jones, janitor account.....	2 60
September 4.....		G. S. Encer, farm account.....	5 50
September 5.....		E. B. Harrison, roof account.....	40 00
September 7.....		J. M. Whitham, Mechanical Department account.....	96 19
September 7.....		D. T. Beaman, Experiment Station account.....	5 00
September 9.....		Taylor Bros., miscellaneous account.....	6 90
September 12.....		K. V. King, miscellaneous account.....	41 00
September 12.....		K. V. King, salary.....	250 00
September 13.....		F. W. Simonds, miscellaneous account.....	2 00
September 14.....		A. E. Menke, Experiment Station account.....	3 50
September 14.....		Patridge & Reagan, printing.....	6 00
September 14.....		T. J. Hunt, Experiment Station account.....	75
September 16.....		J. L. Cravens, Experiment Station account.....	2 00
September 25.....		E. L. Fisher, trustee account.....	21 40
September 30.....		E. H. Murfee, salary.....	500 00
September 30.....		J. M. Whitham, salary.....	400 00
September 30.....		A. E. Menke, salary.....	100 00
September 30.....		O. C. Gray, salary.....	375 00
September 30.....		H. Edwards, salary.....	875 00
September 30.....		F. W. Simonds, salary.....	375 00
September 30.....		J. F. Howell, salary.....	325 00
September 30.....		C. H. Leverett, salary.....	250 00
September 30.....		W. E. Anderson, salary.....	250 00
September 30.....		C. B. Collingwood, salary.....	41 66
September 30.....		G. W. Droke, salary.....	200 00
September 30.....		A. Waggener, salary.....	200 00
September 30.....		J. C. Massie, jr., salary.....	200 00
September 30.....		N. J. Williams, salary.....	200 00
September 30.....		George P. Eustace, salary.....	50 00
September 30.....		A. C. Hoag, salary.....	150 00
September 30.....		R. F. Bardsley, salary.....	150 00
September 30.....		W. F. Bates, salary.....	150 00
September 30.....		J. L. Cravens, salary.....	125 00
September 30.....		W. French, salary.....	40 00
September 30.....		Ida Pace, salary.....	41 66
September 30.....		W. W. McCart, janitor.....	30 00
September 30.....		A. G. Taff, salary.....	16 67
September 30.....		J. M. Whitham, Mechanical Department account.....	169 65
September 30.....		J. M. Whitham, student labor account.....	259 05
September 30.....		Hunter Murfee, messenger.....	3 00
September 30.....		W. F. Bates, student labor account.....	222 08
October 1.....		W. French, Mechanical Department account.....	7 40
October 1.....		W. B. Corle, farm account.....	8 25
October 1.....		B. F. Smith, repairs account.....	18 85
October 2.....		A. E. Menke, Experiment Station account.....	500 00
October 2.....		J. L. Cravens, Experiment Station account.....	125 00
October 2.....		C. Dale, miscellaneous account.....	7 00
October 2.....		C. Dale, Experiment Station account.....	15 00
October 2.....		Mellroy & Co., Mechanical Department account.....	93 52
October 4.....		Curry & Co., farm account.....	2 28
October 4.....		J. J. Curry, Experiment Station account.....	1 00

CURRENT EXPENSE ACCOUNT—*Concluded.*

1889.		
October 4.....	By amount J. M. Whitham, Mechanical Department account.....	\$ 26 05
October 4.....	E. B. Harrison, miscellaneous account.....	2 40
October 5.....	J. F. Bridges, janitor.....	5 00
October 5.....	W. E. Brandon, janitor.....	4 00
October 7.....	Wm. Mayes, farm account.....	50 00
October 7.....	R. Boyd, janitor.....	4 50
October 9.....	McIlroy & Co., Experiment Station account.....	3,467 60
October 10.....	Mellroy & Co., Mechanical Department account.....	42 10
October 14.....	W. F. Bates, farm account.....	10 50
October 18.....	Patridge & Reagan, Experiment Station account.....	2 00
October 18.....	J. M. Whitham, Mechanical Department account.....	7 89
October 18.....	T. T. Varner, janitor.....	3 50
October 26.....	J. H. Neely, biology account.....	3 75
October 31.....	W. F. Bates, student labor account.....	210 71
October 31.....	W. W. McCart, janitor.....	30 00
October 31.....	Patridge & Reagan, printing.....	6 00
October 31.....	H. Murfee, messenger.....	3 00
November 1.....	R. Boyd, janitor.....	4 50
November 1.....	W. E. Brandon, janitor.....	4 00
November 1.....	J. M. Whitham, Mechanical Department.....	8 20
November 1.....	J. M. Whitham, miscellaneous account.....	5 70
November 1.....	F. B. Kell, student labor.....	6 00
November 2.....	Ida Pace, salary.....	41 67
November 2.....	W. French, salary.....	40 00
November 2.....	T. T. Varner, janitor.....	3 50
November 2.....	J. F. Bridges, janitor.....	5 00
November 5.....	C. Dale, repairs account.....	3 05
November 5.....	J. M. Whitham, student labor account.....	330 25
November 5.....	C. A. Mulholland, bill.....	12 15
November 5.....	D. E. Jones, janitor.....	1 10
November 5.....	H. Edwards, library account.....	64 35
November 5.....	McIlroy & Co., Experiment Station account.....	65 75
November 5.....	Bank of Fayetteville, Experiment Station account.....	95 20
November 5.....	F. W. Simonds, miscellaneous account.....	12 50
November 19.....	W. R. Hervey, library deposit account.....	4 00
November 23.....	W. T. Gullledge, library deposit account.....	1 70
November 25.....	George Norman, library deposit account.....	2 00
November 27.....	James Vandeventer, library deposit account.....	1 40
November 29.....	R. T. Smith, farm account.....	10 10
November 29.....	W. F. Bates, farm account.....	15 30
November 29.....	W. I. Blackwell, library deposit account.....	2 00
November 29.....	H. Murfee, messenger.....	3 00
November 29.....	J. L. Cravens, postage.....	29 12
November 30.....	W. French, salary.....	40 00
December 2.....	W. W. McCart, janitor.....	30 00
December 2.....	Ida Pace, salary.....	41 67
December 2.....	W. F. Bates, student labor.....	162 84
December 2.....	J. M. Whitham, student labor.....	300 00
December 2.....	J. C. Futrall, library deposit account.....	1 90
December 2.....	Boles & Conner, farm account.....	7 25
December 2.....	S. A. Horton, library deposit account.....	2 00
1889.		\$ 52,368 48
December 3.....	By amount balance cash in treasury.....	\$ 11,064 77

REPORT
— OF THE —
AGRICULTURAL DEPARTMENT
— AND —
EXPERIMENT STATION.

To the Honorable Board of Trustees :

GENTLEMEN: Since my last report we have had 66 students in the Agricultural Department. The largest proportion of them are in the Preparatory Department. Under the scheme of instruction to be found in the catalogue, but few of these students had the opportunity of reciting in purely agricultural subjects.

Instruction to preparatory students.—During the present year, however, we have gone down into the Preparatory Department and given them a course of instruction by lecture and recitation every afternoon. This procedure has met with considerable success and vitalized the interest.

Bad features.—The features hampering progress are irregular attendance and short residence.

Crop Competition.—In order to stimulate interest, we have, with the approval of the Agricultural Committee of the Board of Trustees, inaugurated a system of crop competition open to agricultural students, awarding two money prizes, one of fifty and one of twenty dollars, to those raising the greatest amount of corn on a specified area. We furnished the fertilizers. The students performed the labor, made their own mixtures, etc. I

think this sort of thing a good feature and productive of a healthy interest. More than all, it causes them to think over and apply what they are studying.

Cattle.—The college herd has increased considerably and has won several prizes at different places. We exhibited this year at Springfield, Missouri, Ft. Smith, and Camden, Arkansas.

In order to increase the efficiency of the Agricultural Department I most respectfully urge and suggest that:

Dairy.—The dairy be fitted up with modern appliances and a competent instructor be engaged to give instruction therein. Mr. J. W. Hart of Opelika, Alabama, is one of the best men in the United States for the place. He has had wide experience and is a specialist in the branch; his recommendations are of the highest, and he can be engaged for \$1,000 per annum.

Horticultural instruction.—In view of the fact that a large majority of the students are in the Preparatory Department, it seems to me advisable that instruction in horticulture should be given to them, for the reason that as a rule residence is short in this institution, and if we wait for the youths to become college students, but few of those who live on a farm would ever receive the instruction.

Crop Competition.—The system of competitive crop raising should be extended. I would respectfully suggest prizes for cereals, roots and tubers, small fruit, vegetables, the details to be arranged later. I can plainly see, at this date, that the majority of the students to whom we, in the Agricultural Department, will have to cater, are young men rarely studying more than two years. According to the system hitherto in vogue, they have received dilute technical instruction in the early part of their course. It is absolutely necessary that more of their time be devoted to purely agricultural studies.

Brief technical course for preparatory students.—The principles indicated in the last few lines have been recently recognized in the Wisconsin Agricultural College, and Prof. Kinney has been empowered by the Board of Regents to institute a technical Agricultural course, suitable to preparatory students only. I am aware that it will be troublesome but it is worth it.

Chemical Department.—In the Chemical Department the course in practical chemistry for the Juniors has been advanced to Quantitative Analysis. The method of instruction adopted in the lower college classes does not satisfy me. Students cannot thoroughly understand chemistry unless they have a practical manipulatory knowledge of it. Instruction by text-book alone, the instructor making the experiments, has become obsolete, and in all institutions where modern methods are adopted, a laboratory course is provided for those who have studied the subject theoretically only.

Extension of laboratory instruction.—Such a system of course requires large laboratory facilities and considerable apparatus—we have plenty of room in the building and I am most decidedly of the opinion that it is the only method of instruction to obtain results that will leave a lasting impression on students and repay them for their time.

Mineralogy.—The instruction in mineralogy has been given as heretofore. The subject comes in the Junior year of the Scientific course only. I think it would be advantageous for all students who takes geology to have mineralogy also.

Physics—Agreeably to the wishes of the board, I have instructed the Freshman class in Physics by mixed lectures and recitations. In this science as in chemistry the practice of long range instruction has become antiquated. We want more practical laboratory work, and in order to keep up with other technical schools must have it.

Physical Laboratory.—A Physical laboratory that will accommodate forty students should be fitted up at all hazard. The every day applications of electricity and allied subjects are of such importance that not to have a physical laboratory would be unfortunate. In the scheme indicated in the new catalogue we have made provision for the Freshman class to take afternoon work in the physical laboratory which I hope will be fitted up. We have also laid out work for the Sophomore class in the afternoon in the chemical laboratory. It is only by this actual handling of things that students can acquire more than a surface knowledge of these sciences that are the basis of all modern

improvements. I therefore most respectfully urge and recommend that rooms be forthwith fitted up, as physical and additional chemical laboratories; also that the Secretary of the Board be authorized to have doors made opening communication between the various laboratories. I am well aware that it will take considerable money to equip and fit up these rooms, but think we will be more than repaid by the advantages that the students will reap. In my opinion fifteen hundred dollars should be devoted toward the expansion of the chemical laboratory, and twenty-five hundred dollars for the new physical laboratory. The department of Physics has been placed in my charge, and the work must be carried out properly. With the facilities at present at my command it is perfunctory at the best. In case you see fit to adopt the suggestions herein respectfully offered, I suggest that the Agricultural Department receive the aid of the services of an assistant to be compensated at the rate of six hundred dollars per annum, who would be able to devote his whole time to this elementary practical physical and chemical work. The Department of engineering has five assistants—we have two. Such a man would be able to save us considerable expense by his ability to construct physical apparatus besides enhancing the dignity of the department and showing our appreciation of the importance of the subject.

Technical chemistry.—I have given instruction in Technical Chemistry to the Senior Scientifics. A new subject here.

Metallurgy.—The Senior Engineers have also studied Metallurgy with me.

Campus.—Considerable improvements have been made in the grounds in the way of roads, walks, etc. I most respectfully urge that the care of the campus be placed in the hands of the Secretary of the Board where it formerly was and properly belongs. We have neither the necessary time nor means to keep it as it should be cared for. Col. Cravens would have both. In case you wish to consider the subject of the grounds, I shall esteem it a favor if you will allow our foreman, Mr. Bates to appear before you.

Experimental station staff changes.—Since making my last

report on the condition of the Experimental Station there have been many changes. Our Horticulturist Mr. E. S. Richman, resigned to accept a \$2,000 appointment in Utah; our Chemist, Mr. E. B. Collingwood, resigned to accept a \$2,200 position in Arizona; the Assistant Chemist, Mr. J. A. Heberly, left us for a Washington appointment; one of our Agricultural assistants left us to take charge of the Nashville and Chattanooga Railway Model Farm.

Pine Bluff.—Our branch station at Pine Bluff has been removed from the ten acre rented tract to a sixty acre place, purchased by the citizens of Pine Bluff. Here we have made many improvements, having built a large barn, dwelling houses, cotton house, etc. We obtained possession late this season and have not been able to do as much as I wish, but on the whole will be able to make a fair showing.

Newport.—At Newport we are continuing our feeding trial on cotton seed products and have built a new barn to accommodate the twelve head of cattle used in the work. A new dwelling house should be erected at that branch. The clause in the Hatch act limiting the amount to be spent for buildings to five per cent of any annual appropriation would prevent work this year. Our abnormally heavy expenses for buildings, fencing, etc., at Pine Bluff have hampered us considerably, but we expect next year to be able to increase the permanent improvements at Newport.

Fayetteville.—At the Fayetteville branch no new buildings have been erected since last December. All our money that could be expended in this line has been utilized south of the mountains. The general work of the Station has gone on with fair success.

Horticultural, Entomological, Chemical, Veterinary.—Brief reports from the Horticulturist, Veterinary and Entomologist follow. The Chemist has been employed on the analyses of commercial fertilizers, sorghum, beets and other work incidental to the investigations on hand. In general Agriculture, work has been in progress at the various branches in farm crops, methods of cultivation, feeding experiments, fertilizer tests, etc.

Bennett's salary.—I desire to draw your attention to the very

excellent services rendered us by the assistant at Newport, Mr. R. L. Bennett. He is a valuable man and deserving of an increase of salary. Without it we cannot retain his services. We are conducting some important feeding experiments there, and it takes a man of practical training and aptitude to watch them carefully. He has been with us some time and is most reliable. I most respectfully urge that his salary be made nine hundred dollars per annum.

Horticulture.—In order that the Horticultural work receive the attention that it calls for, it will be necessary to either sever it from the University chair of Biology and Geology with which it has been temporarily connected, or else provide the present officer, Prof. McNeil with an expert horticultural assistant. The duties of Prof. McNeil in the University do not permit him to give as much personal inspection nor allow him the time for work at the various substations as is absolutely necessary. Horticulture is a most important feature of station work in this State and should not be subordinated. What has been accomplished by Prof. McNeil has been well done, but we want more of it. Under present arrangements he can do no more.

SUMMARY OF DEPARTMENT AND STATION NEEDS.

1. Fifteen hundred dollars to enlarge Chemical Laboratory.
2. Twenty-five hundred dollars to equip a Physical Laboratory.
3. Employment of an Instructor in Dairying.
4. Horticultural Instructor to the lower classes.
5. A brief Agricultural course for Preparatory students.
6. An assistant in Practical Physics and Chemistry.
7. Return the Campus to the Secretary.
8. Increase the Newport Assistant's salary to \$900.
9. Sever Horticulture from the chair of Biology or provide an expert assistant.

VETERINARY DEPARTMENT.—OBJECTS OF STUDY.

I. Texas cattle fever, and specially to determine the presence of bacteria in the internal organs and blood of cattle

raised and slaughtered on infected territory, and if such be present to ascertain its causative relation to this disease.

To test the question as to the possibility of directly communicating the disease to northern cattle and small experimental animals by inoculation of material obtained from southern cattle or from the soil or surface water of infected territory.

The ultimate object aimed at in this work is the development of a system of preventive vaccination by which cattle may be shipped south with less fatality from Texas Fever; and the laboratory work now engaged in is preliminary to the further testing of this system by shipment of cattle to infected regions of this state.

II. Actino-mycosis or lumpy-jaw of cattle; the possibility of its being directly communicated to other animals; the question as to whether the disease is localized or by possible dissemination renders the carcass in all cases unfit for consumption.

FAYETTEVILLE, ARK., November 1, 1890.

DIRECTOR A. E. MENKE. DEAR SIR: Besides the routine work of determining species, answering correspondents relative to insect injury etc., I have pursued investigations along the following lines:

1. Testing the practicability of a system of cotton worm warnings. I was enabled to notify the farmers of the approach of the worm and of its probable numbers in ample time to prepare for it should it have been injurious.

2. Experiments with the Arsenites as reported in bulletin 14.

3. Experiments in the field at Pine Bluff. These were cut short by my sickness.

4. A continuation of the work with insectides this fall.

Yours,

C. W. WOODWORTH.

FAYETTEVILLE, ARK., Oct. 29, 1890.

DR. A. E. MENKE. SIR: I have the honor to submit the

following brief report on the work of the Horticulturist during the past six months, with such recommendations for future work as his experience has suggested.

WORK COMPLETED.

1. Variety tests of 95 varieties of Strawberries.
2. Variety tests of varieties of grapes.
3. Variety tests of radishes, beans and peas.
4. Fertilizer tests with sweet corn, tomatoes, parsnips, spinach, peas, radishes and beets.
5. A method of cultivating cucumbers and melons in climates subject to drouth.

WORK IN PROGRESS.

1. Growing of strawberries in shallow trenches.
2. Experimenting to determine whether cold storage can be economically employed in the preservation of apples.
3. Increasing the collection of large and small fruits at Pine Bluff, Fayetteville and Newport.

WORK PROJECTED.

1. The spraying of grapes with Bordeaux mixture once in two weeks from the time of setting until the ripening of the fruit.
2. The application of a volatile extract of Pyrethrum to grapes to ascertain whether the leaf folder can be reached by this means.

3. Experiments with tomatoes to diminish, if possible, the injurious effects of the rot by

a Choice of varieties.

b Application of fertilizers.

c Use of insecticides.

4. Variety tests and methods of cultivation of sweet corn.
5. Variety tests with grapes, strawberries, and other fruits to be carried on particularly at Pine Bluff and Newport.
6. The growing of the common garden vegetables at Pine Bluff and Newport.

Respectfully submitted,

JEROME McNEIL,

Horticulturist.

COLLEGE CHEMICAL APPARATUS, NOVEMBER 1890.

Valuation 25 per cent off catalogue (E & A) price.

1 air bath and thermostat.....	\$	6 40
2 air pumps—mercury-Sprengles.....		14 25
6 alcohol lamps.....		1 80
1 aspirator bottle, 8 liter.....		3 40
2 alkalimeters, F. and W.....		0 70
2 alkalimeters, R. & G.....		2 25
Assay furnaces—		
1 crucible, of brick.....		5 60
1 crucible, Morgan A, with gas generator.....		21 75
1 crucible and muffle, iron.....		15 00
1 balance.....		63 75
18 beakers.....		2 00
1 bellows, foot, large.....		5 25
1 bellows, foot, small.....		3 00
1 bellows, hand.....		1 50
1 dozen blow pipes, tin.....		2 25
5 blow pipes, brass.....		75
1 blast lamp.....		3 00
56 bottles, glass stoppered, 2½ liter.....		19 00
1¼ dozen bottles, large neck glass stoppered, 2 oz.....		1 70
5 dozen bottles, small neck, square.....		3 75
2 dozen bottles, common 4 ounce, large neck.....		60
10 dozen bottles, reagent, labels in glass.....		13 10
10 dozen bottles, reagent, plain.....		9 40
24 burners, Bunsen.....		13 50
3 burners, argand for light.....		1 10
1 burner, long cylinder gauge.....		75
3 buretts, Mohrs, 100cc.....		3 60
2 buretts, Mohrs, 50cc.....		1 95
2 buretts, glass stop cock, 100cc.....		3 60
2 buretts, glass stop cock, 50cc.....		3 00
1 case for balance.....		5 00
1 caneroles, 3 inch.....		30
1 caneroles, 2 inch.....		25
10 calcium chloride tubes.....		1 00
Corks.....		1 00
12 cork borers.....		1 80
1 cork presser.....		25
10 pounds combustion tubing.....		5 60
1 crucible, graphite, 5½x7.....		40
2 crucibles, graphite, 3x4.....		55
1 crucible, graphite, 2x3.....		25
1 crucible, graphite, 1½x2½.....		20
1 crucible, iron, 3x5.....		75
24 crucibles, Henia, nest of 4.....		1 80
10 crucibles, Henia, 6 and 6.....		10
3¼ dozen round, small.....		1 05
2 dozen crucibles, round, smaller, with covers.....		45
2 crucibles, porcelain.....		30
2 crucible tongues, large iron.....		2 60
1 crucible tongues, German silver, 8 inch.....		90
1 condenser, glass.....		1 00
7 desiccators.....		3 50
2 dozen flasks, assay, 8x1½.....		30
6 flasks, Erlenmeyer, 100cc.....		55
8 flasks, distillation, tubulated neck.....		2 70
2 flasks, flat bottom, ¾ liter.....		45
20 flasks, small, round bottom.....		2 25
2 flasks, 1 liter, round bottom.....		40
9 flasks, graduated, 1,000cc.....		6 10
3 flasks, graduated, 500cc.....		1 70
5 flasks, graduated, 250cc.....		2 25
6 flasks, graduated, 100cc.....		1 80
6 flasks, graduated, 50cc.....		1 60
6 flasks, graduated, 25cc.....		1 35
4 flasks, miscellaneous.....		45
1 fire shovel.....		20
Filter paper.....		25
7 foot glass-ess.....		1 60
2 funnels, 5 inch.....		40

COLLEGE CHEMICAL APPARATUS.—Continued.

1 funnel, 4 inch.....	15
3 dozen funnels, 3 inch, down.....	2 70
1 funnel, separatory, glass stopper.....	75
11 evaporating dishes, porcelain, 7 inch.....	3 95
1 evaporating dish, porcelain, 9 inch.....	70
1 evaporating dish, porcelain, 10 inch.....	1 60
2 evaporating dishes, iron, porcelain lined.....	75
1 graduate, 8 f.z.....	90
1 graduate, 16 f.z.....	1 30
1 graduate, cylinder, 250cc.....	95
1 graduate, cylinder, 200cc.....	75
6 glass crystalizing dishes, 2¼ inch.....	55
1 hectograph.....	1 50
3 gross homeopathic phials.....	3 40
1 horse shoe magnet, 4 inch.....	20
2 hydrometers, Banna & springs.....	1 50
1 hydrometer, counting house, for spirits.....	95
1 lactometer.....	40
1 mortar, iron, 6 inch.....	40
5 mortars, porcelain.....	1 15
1 mortar, porcelain, 4 inch.....	75
12 muffles, 6x12.....	8 30
13 nitrogen bulbs, W. & V.....	3 40
2 nitrogen bulbs, Vollbard's.....	80
1 ore crusher.....	45 00
6 pipettes, 100cc.....	2 70
9 pipettes, 50cc.....	2 70
4 pipettes, 25cc.....	1 5
10 pipettes, 10cc.....	1 50
3 pipettes, 5cc.....	35
6 pipettes, 2cc.....	45
6 pipettes, 1cc.....	45
1 picnometer, 100cc.....	1 50
2 picnometers, 25cc.....	1 80
Pliers, glass cutter, etc.....	75
4 platinum crucibles and covers, } 1 platinum evaporating dish, 2 inch, } 79g.....	24 90
5 platinum filter cones, } Platinum wire foil, etc, }	
3 porcelain boats, 3 inch.....	45
1 porcelain snout.....	20
1 porcelain tray, 8x2x10.....	75
1 porcelain desiccator tray, 5 inch.....	25
Printed labels.....	50
11 retorts, glass.....	3 30
1 retort, porcelain.....	1 50
1 receiver, 1 liter, two-necked.....	20
1 scaler.....	1 50
12½ dozen scarifiers.....	1 60
2 scarifier tongues.....	1 90
1 cupel tongue.....	75
3 Soxhlets, apparatus and condensers.....	5 60
10 supports, iron, square base.....	3 75
1 support, tripod base.....	70
1 support, buret, wood.....	70
3 supports, for filter, wood.....	2 05
3 supports, universal, wooden.....	3 40
1½ dozen test tubes, 1x9.....	1 40
14 dozen test tubes, ¾x6.....	3 70
4 dozen test tubes, ¾x3.....	60
3 test tubes, on foot.....	20
6 test tubes, tubular.....	40
22 test tubes, racks.....	5 80
1 thermometer, C. grad. on enamel plate.....	1 50
1 thermometer, C. 15 to 360, large.....	2 60
1 thermometer, C. 15 to 360, small.....	2 60
1 thermometer, C to 400.....	2 60
2 Tubes, U.....	60
2 Tubes, U crooks.....	40
3 Water suction pump-glasses.....	3 95
4 Water baths, copper, 6 in.....	3 45
1 Water oven, 6x8, copper.....	5 60
4 Watch glasses, 5 in.....	60
5 Watch glasses, 3 in.....	40
6 Water glasses, 2 in.....	10
1 Triangle tripod.....	25

COLLEGE CHEMICAL APPARATUS.— *Continued.*

1 Tripod, iron.....	25
1 set weights brass, 50 g to 1 g.....	1 15
1 set weights	1 50
Pails, strainers, etc.....	1 00
Total apparatus.....	\$ 469 80
Total chemicals discounted 40 per cent on catalogue.....	88 20

SUMMARY COLLEGE CHEMICAL INVENTORY, ANALYTICAL ROOMS.

Apparatus.....	\$ 469 80
Chemicals.....	88 20
Furniture (Hood-work tables, sinks).....	100 00
Gas machine and pipes.....	600 00
Water pipes.....	12 00
	\$ 1,270 00

COLLEGE CHEMICALS.

1 pound acetic acid—glacial, at 30c.....	\$ 30
1 pound common acetic at 75c.....	75
1 pound pure acetone	1 20
2 ounces aluminium chloride at 15c	30
1 ounce aluminium oxide, pure, at 20c	20
$\frac{1}{4}$ pound aluminium sheet at \$1.....	4 00
9 ounces aluminium phosphate.....	
2 pounds ammonium alum at 35c.....	70
$3\frac{3}{4}$ pounds ammonium ferric alum at 40c.....	1 30
1 ounce ammonium acid, (bicarbonate) at 25c.....	
$\frac{1}{2}$ pound ammonium carbonate at 15c.....	07
$\frac{1}{4}$ pound ammonium chloride at 15c.....	04
$1\frac{1}{2}$ pounds ammonium chloride, crude at 12c.....	18
7 ounces ammonium citrate at 20c.....	1 40
1 pound ammonium bromide at 55c.....	55
1 ounce ammonium iodide at 40c	40
2 ounces ammonium molybdate at 30c	60
8 pounds ammonium nitrate at 25c	2 00
$\frac{1}{4}$ pound ammonium oxalate at 90c	20
8 ounces ammonium sulphate at 10c	80
1 ounce ammonium sulphocyanide at 15c.....	15
2 pounds ammonium sulphide.....	1 00
1 ounce antimony metallic at 25c.....	25
2 ounces anthracene at 15c.....	30
$\frac{1}{4}$ ounce aniline, red, at 20c	5
2 gallons of alcohol at \$1.40	4 80
2 ounces alyarine at 10c.....	20
5 pounds arsenic acid at 10c	50
$\frac{1}{4}$ pound arsenic sulphide at 20c	05
2 ounces argols, powdered, at 15c	30
1 pound asbestos at 55c.....	55
5 pounds asphaltum at 17c.....	85
2 ounces balsam fir at 10c	20
$\frac{1}{2}$ pound barium carbonate at 55c.....	25
$\frac{1}{4}$ pound barium chloride at 25c.....	6
$1\frac{1}{2}$ pounds barium hydrate at 50c.....	75
$2\frac{1}{2}$ pounds barium nitrate at 20c	45
1 ounce barium oxide at 12c	12
$\frac{1}{4}$ pound barium oxide caustic anhyd, at \$1.40.....	35
$\frac{1}{2}$ pound barium sulphate at 70c.....	35
2 ounces benzole c. p. at 15c	30
2 ounces benzoic acid (artificial) at 5c.....	10
ounce bismuth at 25c.....	
ounce bismuth hydrate at 5 c	
$\frac{1}{4}$ pound bismuth nitrate cryst. at \$2.50.....	60
1 ounce bismuth subnitrate at 25c.....	25
$1\frac{1}{2}$ pounds black flux substitute at 20c.....	30
3 pounds bone black at 10c.....	30
8 pounds bone meal at 20c.....	1 60
Boric acid	
$\frac{1}{2}$ pound borax crystals at 14c.....	7
$\frac{1}{2}$ pound borax glass at \$1.50	75
1 pound borax calcined at \$1.....	1 00
$\frac{1}{2}$ pound borax, native, at 14c	7
$\frac{1}{2}$ pound cadmium at \$1.25	60
$3\frac{1}{2}$ ounces cadmium binocide, at 60c.....	2 00
3 ounces cadmium nitrate at 40c.....	1 20
2 ounces cadmium sulphate, at 30c.....	60
Cadmium oxide	
1 pound calcium carbonate, c. p. at \$1.....	1 00
$\frac{1}{2}$ pound calcium chloride, at 70c	35
2 pounds calcium chloride, crude, at 10c.....	20
1 pound calcium oxide, c. p. at 40c.....	40
1 ounce calcium phosphate, at 20c.....	20
1 pound calcium acid phosphate, at 30c.....	30
$1\frac{1}{2}$ pounds calcium sulphate, at 20c.....	30
1 ounce carbon tetrachloride, at 75c.....	75
1 ounce carmine at 30c.....	30
2 ounces citric acid at 10c.....	20
1 ounce chloracetic acid at 55c	55
5 pounds chloroform at \$1.50.....	7 50
$\frac{1}{4}$ pound chrome alum at 35c	10
$\frac{3}{4}$ ounce chromium oxide at 12c.....	10
2 ounces collodium at 15c	30
1 ounce cobalt chloride at 30c.....	30
$\frac{1}{4}$ pound cobalt nitrate at \$2.50.....	60

COLLEGE CHEMICALS.—*Continued.*

$\frac{3}{4}$ pound copper, ammoniated.....	29
$\frac{1}{2}$ pound copper clippings at 40c.....	75
1 pound copper, granulated, at 75c.....	20
2 ounces copper nitrate, at 10c.....	2 70
$1\frac{1}{2}$ pounds copper oxide at \$1.80.....	60
4 ounces copper suboxide, at 15c.....	
Copper sulphate.....	1 60
2 ounces ethyl iodide at 80c.....	60
1 pound ferric chloride, cryst. at 60c.....	2 10
$\frac{1}{2}$ ounce ferric protochloride.....	35
3 pounds ferric oxide, at 70c.....	35
$3\frac{1}{2}$ pounds ferrous sulphate at 10c.....	90
6 pounds ferrous sulphide at 15c.....	12
1 pound fluorspar, powdered, at 12c.....	80
1 pound formic acid at 80c.....	20
$\frac{3}{4}$ pounds galls at 30c.....	80
2 pounds galls, powdered, at 40c.....	30
2 ounces gallic acid at 15c.....	1 50
10 gallons gasoline at 15c.....	15
15 grains gold chloride at 15c g.....	60
3 pounds graphite at 20c.....	
1 ounce gutta-percha.....	1 10
2 ounces gum benzoic at 55c.....	60
2 ounces gum quiaicum at 30c.....	70
$\frac{1}{2}$ pound gum sandaric at 35c.....	1 10
1 ounce gum tragacanth at 55c.....	55
3 pounds hydric chloride, c. p., at 19c.....	3 00
Hydric chloride carb. at $2\frac{1}{2}$ c.....	8 00
Hydric nitrate carb., 8c.....	55
3 pounds hydric sulphate, c. p., at 19c.....	2 50
Hydric sulphate, carb., at $2\frac{1}{2}$ c.....	
1 ounce hydrofluorosilicic acid.....	80
1 pound indigo at 80c.....	80
2 ounces iodine at 40c.....	30
3 ounces iron wire at 10c.....	15
$\frac{3}{4}$ ounce lactic acid at 20c.....	35
$1\frac{1}{2}$ pounds lead acetate, at 25c.....	45
3 pounds lead carbonate, at 15c.....	25
$\frac{1}{2}$ pound lead chloride, at 50c.....	7
$\frac{1}{2}$ ounce lead chromate, at 15c.....	3 00
10 pounds lead, granulated, at 30c.....	37
$1\frac{1}{2}$ pounds lead nitrate, at 25c.....	5
$\frac{1}{2}$ pound lead oxide, at 10c.....	6
$\frac{1}{2}$ pound lead oxide, red, at 12c.....	15
$\frac{1}{2}$ pound lead peroxide, at 60c.....	
10 gallons linseed oil.....	20
$\frac{1}{2}$ ounce lithium chloride at 40c.....	20
1 ounce logwood extract at 20c.....	30
$\frac{1}{2}$ pound magnesia, calcined, at 60c.....	50
2 pounds magnesium chloride, at 2c.....	90
9 pounds magnesium sulphate, at 10c.....	40
10 grains magnesium wire, at 80c an oz.....	10
$\frac{1}{2}$ ounce manganese carbonate, at 20c.....	20
$\frac{1}{2}$ pound manganese chloride, at 45c.....	20
2 pounds magnesia oxide, block, at \$2.....	4 00
$\frac{1}{2}$ pound magnesia sulphate, at 50c.....	25
1 ounce mannite at 20c.....	20
1 pound methyl alcohol at 25c.....	40
1 ounce mercuric acetate, at 40c.....	20
1 ounce mercuric bisulphate, at 20c.....	30
$\frac{1}{4}$ pound mercuric chloride, at \$1.20.....	1 00
$2\frac{1}{2}$ ounces mercuric cyanide, at 40c.....	40
1 ounce mercuric iodide, at 40c.....	40
1 ounce mercuric protoiodide, at 40c.....	40
$\frac{1}{4}$ pound mercuric nitrate, at \$2.....	50
1 ounce mercuric oxide, black, at 30c.....	30
$\frac{1}{2}$ pound microcosmic salt at 15c.....	7
1 ounce molybdic acid at 20c.....	20
$\frac{3}{4}$ pound naphtha, purified.....	
1 ounce naphthaline, recrystallized, at 10c.....	10
5 ounces nickel nitrate, at 20c.....	1 00
9 ounces nickel sulphate, at 10c.....	90
$\frac{1}{2}$ ounce nicotine at \$1.50.....	20
1 ounce opium at 40c.....	40
1 pound orange shellac.....	
$\frac{1}{2}$ pound oxalic acid at 60c.....	30

COLLEGE CHEMICALS.— *Continued.*

1 ounce pepsin, German, at 60c.....	60
7 pounds potassium carbonate, at 15c.....	1 05
8 pounds potassium chlorate, at 25c.....	2 00
2 pounds potassium chloride, at 25c.....	50
1 pound potassium chromate, at 60c.....	60
1 pound potassium bichromate, at 30c.....	30
1 pound potassium cyanide, at 45c.....	45
1/2 pound potassium bromide at 45c.....	15
1 1/2 pounds potassium bi-sulphate, at 65c.....	95
1 ounce potassium ferricyanide, at 10c.....	10
1 ounce potassium ferrocyanide, at 35c.....	35
2 ounces potassium hyposulphite, at 15c.....	30
1/4 ounce potassium iodide, at 30c.....	7
1 ounce potassium manganate, at 15c.....	15
3 1/2 pounds potassium nitrate, at 10c.....	10
4 pounds potassium oxalate, at 30c.....	1 20
1/4 pound potassium permanganate, at 55c.....	15
1 ounce potassium platonic chloride, at \$8 50.....	8 50
3/4 pound potassium sulphate, at 15c.....	10
1/2 pound potassium sulphocyanide, at \$1 20.....	60
1/4 pound phosphorus.....	30
1/2 ounce phosphoric acid, glacial, at 15c.....	7
1 1/2 ounce phosphoric anhydride, at 30c.....	45
1/4 ounce platinum chloride, at \$7 50.....	1 85
2 ounces pumice stone.....	60
2 ounces pyridin, pure, at 30c.....	20
1/2 ounce pyrogallie acid, at 40c.....	30
1 ounce salicin at 30c.....	30
1 ounce silicic acid at 20c.....	20
3 ounces silver nitrate, at 75c.....	2 25
1 pound sodium acetate, at 30c.....	30
3 ounces sodium arsenite, at 10c.....	30
1 ounce sodium benzoate, at 25c.....	25
2 pounds sodium carbonate, at 10c.....	20
4 pounds sodium caustic C. calc., at 55c.....	2 20
1 pound sodium chlorate, at 50c.....	50
1/2 pound sodium chloride, at 45c.....	25
1/4 pound sodium citrate, at 70c.....	15
1 ounce sodium ethylate, at \$1 00.....	1 00
1 pound sodium biborate, at 15c.....	15
1 ounce sodium fluoride, at 40c.....	40
1 ounce sodium formate, at 40c.....	40
1/2 pound sodium hydrate, pure, at 50c.....	25
1/2 pound sodium hypophosphite, at \$1 40.....	70
1 1/2 pounds sodium hyposulphite, at 10c.....	12
1 ounce sodium iodide, at 35c.....	35
3/8 pound sodium lime, at 55c.....	35
3/4 ounce sodium lactate, at 30c.....	20
2 ounces sodium metaphosphate, at 40c.....	80
3/4 ounce sodium nitroprusside, at \$1 00.....	75
3 pounds sodium nitrite, at 35c.....	1 65
1 pound sodium nitrate, in sticks, at \$1 25.....	1 28
6 ounces sodium phosphate, at 10c.....	60
4 3/4 pounds sodium sulphate, at 3c.....	15
2 pounds sodium sulphite, at 20c.....	40
1/2 pound sodium stannate at 75c.....	35
1 pound sodium sulphide, crystallized, at 75c.....	75
1 pound sodium tartrate, at \$1 00.....	1 00
1 ounce sodium tungstate, at 40c.....	40
1 ounce tin bichloride, at 15c.....	15
1/4 ounce tin chloride, at 10c.....	7
2 ounces tin protochloride, at 10c.....	20
1 1/2 pounds tin foil, at 50c.....	75
1/2 pound tin, metallic, at 50c.....	25
1 pound tartaric acid, at 50c.....	50
1 ounce toluene, at 12c.....	12
1 ounce toluidin, at 25c.....	25
1/2 pint turpentine, at 15c.....	7
1/2 ounce uric acid, at 85c.....	40
1 ounce uric acid, at 80c.....	80
4 ounces varnish, Demar.....	1 00
1/2 ounce venetian, at \$1 55.....	30
1/2 zinc, metallic, bars, at 60c.....	30
1 pound zinc, metallic, powdered, at 30c.....	30
1/2 pound zinc oxide, at 15c.....	5
1 1/4 pounds zinc sulphate, at 10c.....	12
1/2 pound absorbent cotton.....	
1/4 pound rubber cloth.....	

COLLEGE CHEMICALS.—*Continued.*

20 per cent discount on cost price.

$\frac{1}{2}$ pound alum ammonium.....	15.
5 pounds alum ammonium, ferrie.....	60
$\frac{1}{2}$ pound alum potash.....	15
12 pounds ammonium hydrate.....	1 79
$5\frac{1}{2}$ pounds ammonium chloride.....	1 15
5 pounds ammonium nitrate.....	2 00
8 pounds ammonium carbonate.....	3 20
2 ounces ammonium nitrate anhyd.....	48
$1\frac{1}{3}$ pounds ammonium oxalate, c. p.....	80
3 pounds alcohol, absolute.....	1 32
3 gallons alcohol, common.....	5 75
2 pounds asbestos.....	40
1 pound arsenic.....	80
1 pound barium chloride.....	20
1 ounce benzoic acid.....	20
$\frac{1}{2}$ ounce brucine.....	80
1 pound calcium carbonate, c. p.....	80.
$1\frac{1}{2}$ pounds calcium chloride, pure.....	30
5 pounds calcium chloride, fused cam.....	1 00.
5 pounds chloroform, pure.....	2 00
$\frac{1}{4}$ pound citric acid.....	5.
$\frac{1}{4}$ pound cochineal.....	10
2 pounds copper oxide, granulated.....	2 88.
1 pound copper oxide, wire.....	1 60
1 pound copper sulphate, c. p.....	35
15 pounds copper sulphate, crude.....	95
12 pounds ethyl ether.....	7 20
2 pounds ether, petroleum.....	35
$\frac{1}{4}$ pound ferric chloride.....	10.
$1\frac{1}{2}$ pounds glycerine.....	50
30 pounds hydric chloride, c. p.....	4 55.
30 pounds hydric nitrate, c. p.....	4 80
36 pounds hydric sulphate, c. p.....	5 45
1 ounce iodoforn.....	35.
2 gallons kerosene.....	40
5 pounds lead oxide.....	48
2 pounds magnesia, calcined.....	65
8 pounds magnesia chloride.....	2 55.
1 ounce malic acid.....	70
1 ounce meconic acid.....	1 40.
$\frac{1}{4}$ pound mercury, metallic.....	20
2 pounds mercuric oxide, c. p.....	3 20
$1\frac{1}{4}$ pounds molybdic acid.....	2 10
$\frac{1}{2}$ ounce morphine.....	2 10
1 ounce opium.....	30
$2\frac{1}{4}$ ounces pepsin, German.....	1 05
1 pound phenol.....	40
1 ounce phenolphthalein.....	80
$1\frac{1}{2}$ ounces picric acid.....	15
1 pound potassium hydrate, by alcohol.....	79
5 pounds potassium hydrate, in sticks.....	2 40
$\frac{1}{2}$ pound potassium acid sulphate, c. p.....	35
1 pound potassium cyanide.....	55
$\frac{1}{4}$ pound potassium chlorate.....	5
1 pound potassium iodide.....	2 65
$2\frac{1}{2}$ pounds potassium permanganate.....	1 10
5 pounds potassium.....	1 20
5 ounces platinum chloride.....	50.
2 pounds Rochelle salts, crystals.....	55
13 pounds Rochelle salts, commercial.....	60
1 pound salicylic acid.....	1 30.
10 pounds sand, powdered.....	
$3\frac{1}{2}$ pounds sodium hydrate, c. p., by alcohol.....	2 50
30 pounds sodium hydrate, 98 per cent.....	3 40
$2\frac{1}{8}$ pounds sodium caus., c. calc.....	60
1 ounce sodium bichlorate.....	10
2 pounds sodium acetate.....	90
$\frac{3}{4}$ pound sodium bicarbonate.....	50.
1 pound sodium carbonate.....	30
$1\frac{1}{2}$ pounds sodium chlorate.....	60
1 ounce silver nitrate.....	60
$1\frac{1}{2}$ ounces strychnia.....	60
1 ounce tannic acid.....	12
1 ounce gallic acid.....	12.

SUMMARY EXPERIMENT STATION INVENTORY,
CHEMICAL DEPARTMENT, NOVEMBER, 1890.

Apparatus.....	\$ 1,299 05
Chemicals.....	92 20
Furniture	78 50
Gas supply pipes.....	50 00
Water supply pipes.....	50 00
	<hr/>
	\$ 1,569 75

INVENTORY CHEMICAL DEPARTMENT EXPERIMENT STATION, NOVEMBER, 1890.

Apparatus—Valuation (E. & A.) Catalogue price less 25 per cent.

1 air bath, 10x12 inches.....	\$ 7 50
1 air pump, Geisler.....	75 00
1 alcoholimeter or vaporimeter.....	11 25
1 alcohol lamp.....	45
6 alkalimeters.....	6 75
1 set areometers (21).....	30 00
2 aspirators, glass.....	2 60
1 aspirator, brass.....	1 10
3 aspirators, bottles.....	2 70
1 balance, Becker No. 7.....	62 75
1 balance, short beam.....	67 50
1 balance for rough weighing.....	18 40
1 balance case for above.....	5 00
9 Balloon jars, 3 liter.....	3 00
60 beakers, large.....	13 50
60 beakers, small to medium.....	6 75
28 beakers, narrow necked.....	9 80
1 bellows, foot.....	5 00
1 bench vise, small.....	25
1 blast lamp.....	3 00
4 burners, Erlenmeyer, argand flame.....	10 50
5 burners, Bunsen, for gasoline.....	2 80
6 burners, Bunsen, for gasoline.....	8 75
5 burners, Bunsen, ordinary.....	1 70
2 burners, Fletcher's, solid flame.....	3 00
1 burettes, glass, stop cock, 100cc 1-5.....	1 80
3 buret es, glass, stop cocks, 50cc 1-10.....	4 50
2 burettes, inside glass rods, 50cc 1-10.....	3 30
2 brushes, camel's hair.....	10
3 brushes for cleaning long glass tubes.....	10
1 set Brix spindles with thermometer, 3 in case.....	15 00
1 calcium chloride U tube.....	25
2 calcium chloride upright tubes.....	2 25
1 calcium chloride upright tube, small.....	55
4 yards cloth, factory.....	20
4 yards cloth toweling.....	25
1 combustion furnace, gas.....	37 50
1 set cork borers (12).....	1 30
2 crucible tongs, 8 inch.....	3 00
9 condensers, glass.....	6 75
1 condenser for fat extraction.....	7 50
1 condenser, copper, for kjeldahl.....	7 50
1 condenser, long, galvanized iron.....	2 00
1 d still for water with condenser.....	10 00
10 distillation tubes, 10cc.....	75
1 desiccator bell jar, 10 inch plate (12).....	3 36
7 desiccators, ordinary.....	10 50
11 drying tubes, Caldwell.....	9 00
1 drug mill, large.....	7 50
6 Erdman's burettes floats.....	1 55
3 extraction apparatus, Krussler.....	7 90
5 extrac ion apparatus, Soxhlet, large.....	11 25
14 extraction apparatus, Soxhlet, small.....	21 00
11 quires filter paper, S. & S. (595).....	4 00
3 flasks, Erlenmeyer.....	45
2 flasks, flat bottom, 1½ liter.....	55
15 flasks, flat bottom, 1 liter.....	3 50
34 flasks, flat bottom, ½ liter.....	4 10
100 flasks, flat bottom, 200cc down.....	7 50
25 flasks, round bottom, 500cc.....	3 70
14 flasks, round bottom, 250 to 300.....	2 10
2 flasks, pear shaped.....	60
5 flasks, pear shaped, small.....	95
2 flasks, Volland's nitrogen, bulbed.....	85
1 flask for filter pump.....	25
24 flasks for fat in milk.....	6 75
10 flasks for digesting under pressure.....	2 50
11 flasks, graduated, 1000cc.....	7 40
11 flasks, graduated, 500cc.....	6 20
7 flasks, graduated, 250cc.....	3 15
12 flasks, graduated, 200cc.....	4 95
10 funnels, glass, 5 inch.....	1 90
30 funnels, glass, 3 inch.....	3 35

INVENTORY—Continued.

6 funnels, glass, 1½ inch.....	35
1 funnel, separatory, glass stoppered.....	75
17 funnels, tin.....	2 50
13 funnel tubes, thistle head bulb.....	2 40
3 funnel tubes, thistle head, straight.....	25
1 gas apparatus, Winkler.....	9 00
1 gas bag of rubber.....	8 45
1 gas wash bottle, glass with brass fittings.....	75
7 glass evaporating dishes, 3 inch.....	1 05
1 graduated cylinder, 1000cc.....	1 90
1 graduated cylinder, 200cc.....	75
1 graduated cylinder, 100cc.....	60
1 hydrogen generator.....	2 00
1 hammer, large.....	50
1 hammer, small.....	10
33 jars, 1 quart, fruit.....	3 00
7 jars with glass top clamp.....	3 15
1 jar, battery, 8x7.....	40
18 boxes labels, No. 208.....	1 35
4½ boxes labels, No. 225.....	25
1 lantern.....	75
20 boxes matches.....	40
6 milk pans.....	50
1 mortar, agate, 3½ inch.....	3 00
1 mortar, iron, large (1).....	1 05
1 mortar, porcelain, 6 inch.....	75
1 mortar, porcelain, 5 inch.....	55
1 mortar, porcelain, 4 inch.....	50
3 mortars, porcelain, 2 inches.....	55
4 nickel crucibles.....	2 10
6 nickel evaporating dishes, 6 inch.....	11 00
5 nickel evaporating dishes (4¾).....	7 50
2 note books.....	40
1 oil stone.....	75
1 oil can, 1 gallon.....	25
6 doz. papers for fat extraction.....	1 95
72 doz. paper sacks.....	2 00
1 picnometer with thermometer.....	2 45
6 pipettes, 100cc.....	2 70
5 pipettes, 50cc.....	1 50
5 pipettes, 25cc.....	1 30
8 pipettes, 10cc.....	1 20
2 pipettes, 5cc.....	25
1 pipette, 1 to 5cc.....	45
1 polariscope.....	225 00
1 polariscope gas lamp.....	75
1 porcelain vase.....	
3 evaporating dishes, 10 inch.....	2 90
2 evaporating dishes, 9 inch.....	1 35
20 evaporating dishes, 7 inch.....	11 25
28 evaporating dishes, 4 inch.....	6 70
62 evaporating dishes, 3½ inch.....	11 65
38 evaporating dishes, 3 inch.....	5 50
21 evaporating dishes, 2 inch.....	2 35
3 combustion boats, 3 inch.....	45
13 crucibles with covers.....	1 95
3 crucibles, Gooch form.....	1 10
11 doz. phials, homeopathic.....	77
1 piler.....	25
6 pinch cocks.....	70
Platinum ware,	
4 evaporating dishes, 3 inch,	} 386 G.....
6 crucibles with covers,	
2 crucibles, Gooch form,	
6 filter covers, small,	
2 filter covers, large,	
Foil,	
12 perforated dishes,	
2 feet wire,	
4 triangles, Fresenius style.....	3 00
11 potash bulbs.....	10 30
1 screw driver.....	20
1 screw press, common.....	5 25
1 screw press, aluminum.....	
1 sieve, 12 inch brass, wood frame.....	75
1 sieve, 9 inch silk, wood frame.....	1 00
2 sieves, 6 inch brass.....	60
1 sieve, 5½ inch iron, wood frame.....	10

INVENTORY—Concluded.

2 sieves, 3 inch metal frame, handles.....	20
3 spatulas.....	1 10
2 spatulas, horn.....	20
1 step ladder.....	75
16 supports, small iron 3 ring square.....	8 40
6 supports, large iron with rings, clamps, etc.....	36 00
3 supports, burettes wooden 2 arms.....	2 80
2 supports for for several filters.....	1 50
4 support, round, for seven.....	75
2 supports for Soxhlet apparatus.....	40
2 syringe bulbs, rubber.....	75
5 test tubes, large.....	20
12 test tubes, grad. 10cc, in rack.....	1 50
6 test tube brushes.....	20
30 feet tubing, rubber, $\frac{3}{4}$ inch.....	2 70
20 lbs. tubing glass, ordinary, small.....	7 50
9 lbs. tubing combustion.....	5 00
8 tubes, Y's, glass.....	1 50
6 tubes, F's, glass.....	1 00
3 tubes, U's, large, 3 bulbed.....	1 05
5 tubes, U's, medium.....	95
3 tubes.....	1 00
1 uriometer.....	95
8 watch glasses, 4 inch.....	95
6 watch glasses, 3 inch.....	50
17 watch glasses with clamps.....	1 90
1 water bath, copper.....	15 00
1 water bath for Caldwell's tubes.....	2 50
2 water baths, galvanized iron.....	5 00
15 weighing bottles.....	3 35
1 weight, brass, 1 lb. down.....	1 50
1 weight, 100 G to 1 G, brass weight.....	13 50
2 weights, 100 to $\frac{1}{2}$ G, glass weight.....	25 00
3 Woolf's bottles, 1 pt.....	1 50
1 thermostat.....	1 20
2 thermomer, C 1-10 °.....	6 00
3 thermometers, C 20 to 360 °.....	4 50
1 thermometer, C.....	75
1 scale.....	11 25
Total apparatus.....	\$ 1,299 05.

LABORATORY FITTINGS AND FURNITURE.

1 balance shelf.....	\$ 1 00
Chairs.....	2 00
1 stool.....	50
1 hood.....	10 00
Shelves for chemicals.....	5 00
1 stove, small, with pipe, etc.....	2 50
1 stove, large, with pipe, etc.....	7 50
6 tables, pine.....	5 00
3 tables with drawers and shelves.....	40 00
3 water-sinks with outlets.....	5 00
Water supply pipes.....	50 00
Gas pipes and fittings, including pipes from gas-machine.....	50 00
Total.....	\$ 178 50

PROPERTY OF FARM AND STATION.

Inventory of Farm Tools, November 22, 1890.

1 Victor manure spreader.....	\$ 80 00
1 two-horse Studebaker wagon.....	40 00
1 Buckeye mower.....	40 00
1 Buckeye wheat drill.....	50 00
1 Aspinwall potato planter.....	40 00
1 Keystone rake.....	15 00
1 Keystone disk harrow.....	20 00
1 Rotary harrow.....	7 00
1 Double A iron tooth harrow.....	8 00
1 Smalley's ensilage cutter and horse power.....	100 00
1 double shin turning plow, No. 3.....	10 00
1 Ponnship turning plow, No. 15.....	10 00
1 Oliver's chilled, No 20.....	10 00
1 grub plow.....	5 00
2 double shovels with points.....	5 00
2 bull tongue plow stocks with points.....	4 00
1 steel Pony plow.....	5 00
1 cross-cut saw.....	1 50
1 buck saw.....	75
1 hand saw.....	1 00
12 weeding hoes.....	3 00
5 sprouting hoes.....	3 00
8 mattocks.....	3 00
4 chopping axes.....	3 00
3 round pointed shovels.....	2 50
3 spades.....	2 50
2 steel well drills.....	1 50
1 crow-bar.....	1 00
3 steel garden rakes.....	1 50
2 well pulleys.....	50
1 pair 300-pounds cotton scales.....	1 00
1 brace and bits.....	1 50
1 auger.....	75
1 carpenter's square.....	50
4 stone hammers.....	2 00
1 sledge hammer.....	50
2 hatchets.....	1 00
2 cane knives.....	1 00
1 hay knife.....	1 00
1 scythe and cradle.....	1 50
1 bush blade.....	75
1 mowing blade.....	75
1 set leather wagon harness.....	10 00
1 set plow harness.....	5 00
1 man saddle and bridle.....	6 00
2 pitch forks.....	1 50
2 dung forks.....	1 50
1 potato digger.....	1 50
2 pairs counter scales.....	4 00
1 pair Jones's platform scales.....	40 00
1 pair spring scales.....	1 00
1 hand corn planter.....	75
1 horse corn planter.....	5 00
1 lantern.....	75
1 wheel-borrow.....	2 00
1 grind stone.....	1 50
6 feed buckets.....	1 00
2 feed baskets.....	1 00
1 hay fork.....	10 00
4 bull's affs.....	1 00
1 well pump.....	8 00
1 force spraying pump.....	1 50
1 log chain.....	1 00
1 grain shovel.....	50
1 well bucket.....	1 50
3 garden hoes.....	10 00
1 Planet J. R. hand plow.....	25 00
1 shorghum mill.....	
Total.....	\$ 625 75.

PROPERTY OF FARM AND STATION—*Concluded.*

Inventory of Stock, November 2, 1889.

2 Holstein bulls,		
5 Holstein cows,		
4 Holstein calves,		
2 Hereford bulls,		
2 Hereford cows,		
1 Hereford calf,		
1 Sussex bull,		
4 Sussex cows,		
1 Sussex calf,		
1 Devonshire bull,		
1 Devonshire cow,		
1 Devonshire calf,		
2 scrub cows,		
3 grade colors.....		10 00
8 white Yorkshire hogs.....		4 00
1 Poland China.....		60 00
4 mules.....		600 00
Total.....		\$ 3,674 00

INVENTORY OF NEWPORT BEACH STATION
PROPERTY.

2 barns.....	\$ 400 00
1 shed.....	50 00
1 mower.....	85 00
1 cultivator.....	20 00
1 wagon.....	15 00
1 pump and hose.....	25 00
Scale.....	
Miscellaneous implements.....	50 00
2 mules.....	200 00
12 steers.....	176 00
1 Sussex bull.....	
2 hogs.....	
1 dwelling house.....	140 00
1 barn.....	295 00
1 cotton house.....	75 00
2 mules, each \$130.....	260 00
1 pump.....	15 00
1 cook stove.....	10 00
1 wagon.....	45 00
Harness.....	5 00
1 Brinley plow.....	8 50
1 Banner cotton planter.....	8 00
1 sub-soil plow.....	5 00
3 plow stocks, each \$2.00.....	6 00
Plows (10 pieces).....	2 00
1 harrow.....	6 00
1 harrow.....	8 00
1 pair balances.....	20 00
1 pair scales.....	1 00
1 feed cutter.....	10 00
6 barrels fertilizers.....	
5 sacks fertiliz- rs.....	
2 hoes, each 50 cents.....	1 00
1 rake.....	50
1 hand saw.....	1 50
1 post hole digger.....	1 00
1 wire stretcher.....	1 00
1 wire cutter.....	50
1 box numbers.....	1 00
Total.....	\$ 1,947 00

INVENTORY OF THE APPARATUS IN THE DEPARTMENT OF ENTOMOLOGY.

OFFICE SUPPLIES.	
Books, 36 volumes, about.....	\$ 36 00
Artist material.....	10 00
Dating stamp.....	1 00
LABORATORY SUPPLIES.—MICROSCOPICAL APPARATUS.	
Stand.....	11 60
Micrometer.....	50
Nose piece.....	3 00
Objective, 1-5.....	7 50
Objective, 3/4.....	4 00
Objective, 3-6.....	9 00
Camera lucida.....	75
Stage forceps.....	1 50
Illuminator.....	9 00
Compressorium.....	2 50
Dissecting stand.....	6 00
Lens.....	50
Knives.....	1 50
Forceps.....	10
Turn table.....	1 50
Slide boxes.....	1 00
Slips.....	5 00
Covers.....	2 00
Mounting material.....	1 00
Pins.....	2 00
FOR INSECTORY.	
Flower pots.....	50
Lamp chimneys.....	1 00
Pill boxes.....	1 00
Vials and corks.....	7 00
Crookneck vials.....	10 00
Bees.....	10 00
Hives.....	10 00
Total.....	\$ 155 85

ITEMIZED LIST.

BOOKS.

Animal Plagues (2 vols.)	Frey—Histology and histo-chemistry of man.
Klein—Bacteria.	Dun—Veterinary Medicines.
Hill—Bovine Diseases.	Gradle—German theory of disease.
Hill—Canine.	Woodbead—Practical Pathology.
Haaf—(Dehorning.)	Smith—Veterinary Hygiene.
Gegenbaum—Compar. Anatomy.	Flemming—Actinomycosis.
Bausch & Lomb—Microscopy.	
Phin—Microscopy.	

INVENTORY OF APPARATUS.

Books—15 Volumes (10 per cent depreciation allowed).....	\$ 40 00
Veterinary instruments (surgical).....	176 00
Microscopical apparatus.....	103 00
Bacterial.....	89 00
Total.....	\$ 408 00

SURGICAL INSTRUMENTS.

Dental Case (Sayre & Drake.)	Tourniquet.
Hypodermic Syringe.	Spatulum.
Dissecting Case.	Kitchen Saw.
Ecraseur.	Hatchet.
Tracheotomy Tube.	Hammer.
Trocars, 2.	Scis-ors.
Knife and Steel.	Hobbles.
H. R. Syringes, 2.	Dehorning outfit.
Enema Syringe, H. R.	Spaying Scissors.
Mouth Speculum.	Vaginal Distender.
Hoof Knives.	Crotchet (parturition.)
Fleams.	Catheter (horse.)
Embryotomy Knife.	Seton Needle.
Miles Castrating Knife.	Pocket Case.
Lenaculum, 2.	Probandy.
Hoof Searcher.	Mortars.
Sage Knife.	Hand Bag.
Eye Speculum.	Medicine Case.
Bull Punch.	Pr. M. Case.
Artery Forceps.	

MICROSCOPICAL.

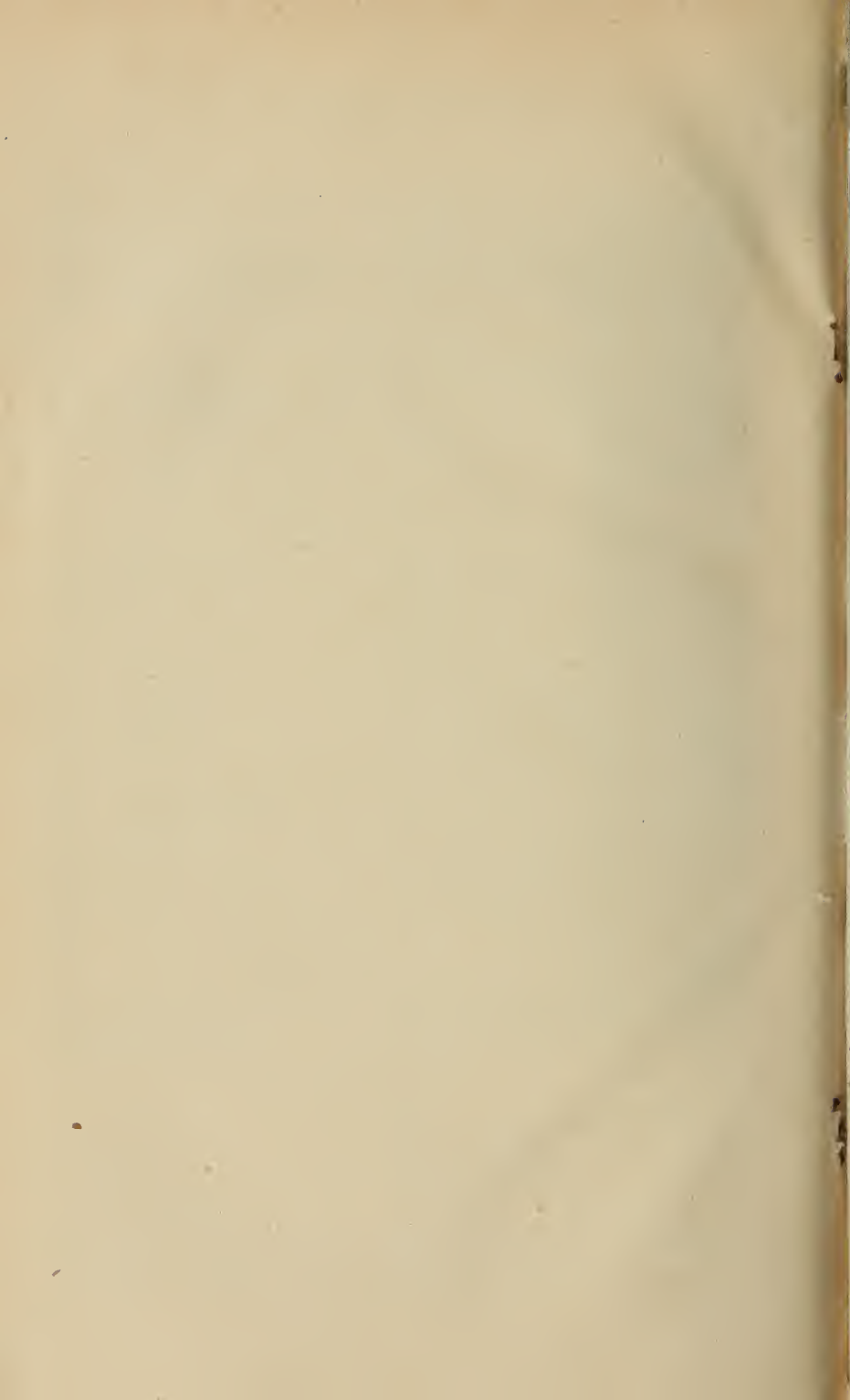
Investigator Stand (B. & L.)	1-10 inch Objective, H. I.
A. & C. Oculars.	Dissecting Microscope.
$\frac{1}{4}$ and 1-5 Objectives.	Slides, Boxes, Dishes, Forceps,
Substage Condenser.	Knives, etc.

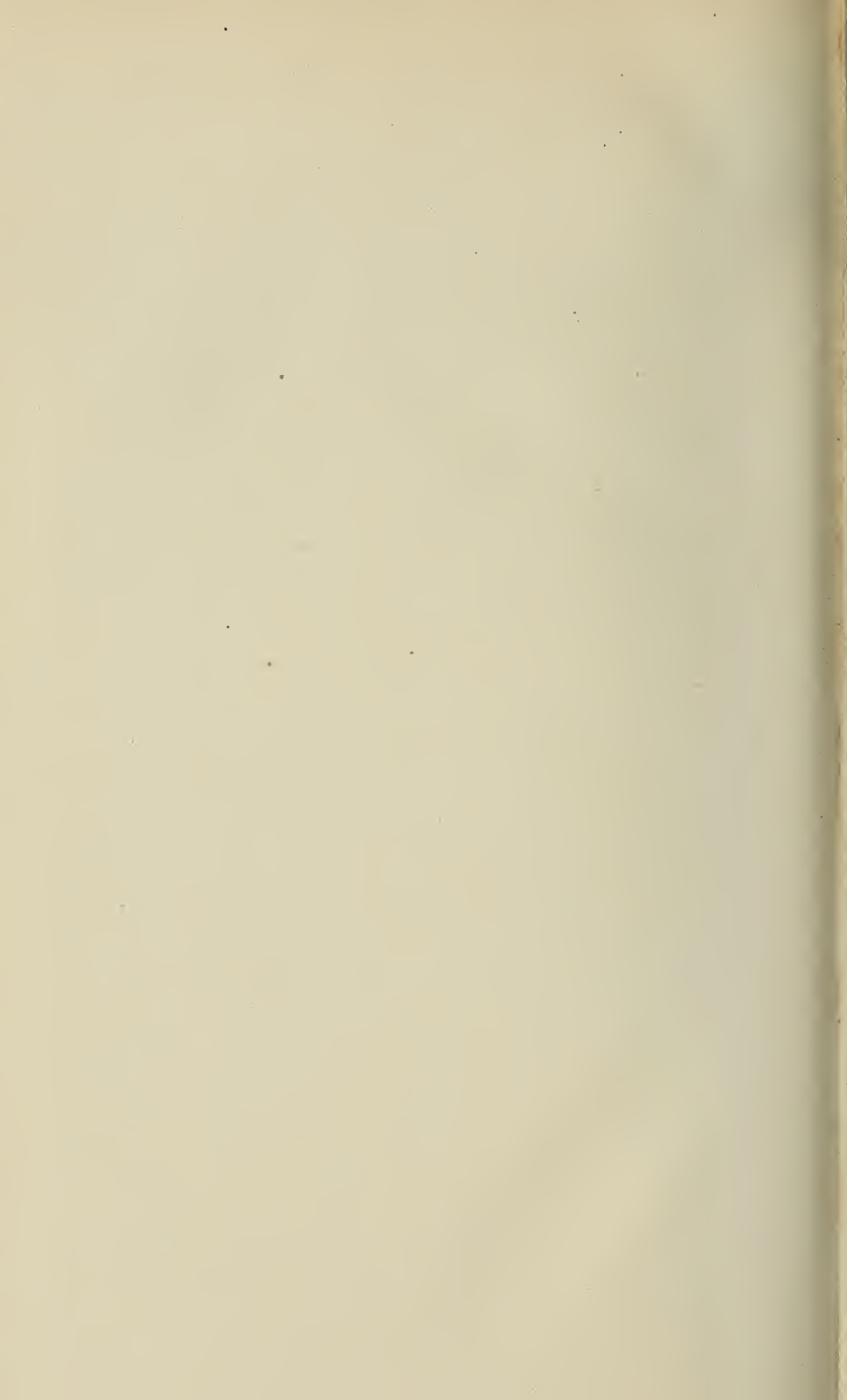
BACTERIAL.

Oven.	Bactereoscopical tubes, 2 dozen.
Steam Sterilizer.	Gelatine dishes, 1 dozen.
Incubator.	Test tubes, 100.
Thermosadt.	Thermometers, 2.
Iron box for plates.	Flasks and other glassware.
2 baskets of wire.	Rice boiler.
Damp chambers, 2.	Stains and microscopical reagents.
Gelatine plate chamber and elevator	Paraffine bath.
with circular level.	Microtome and knife.
Bell jars, 5.	Trichinoscope.

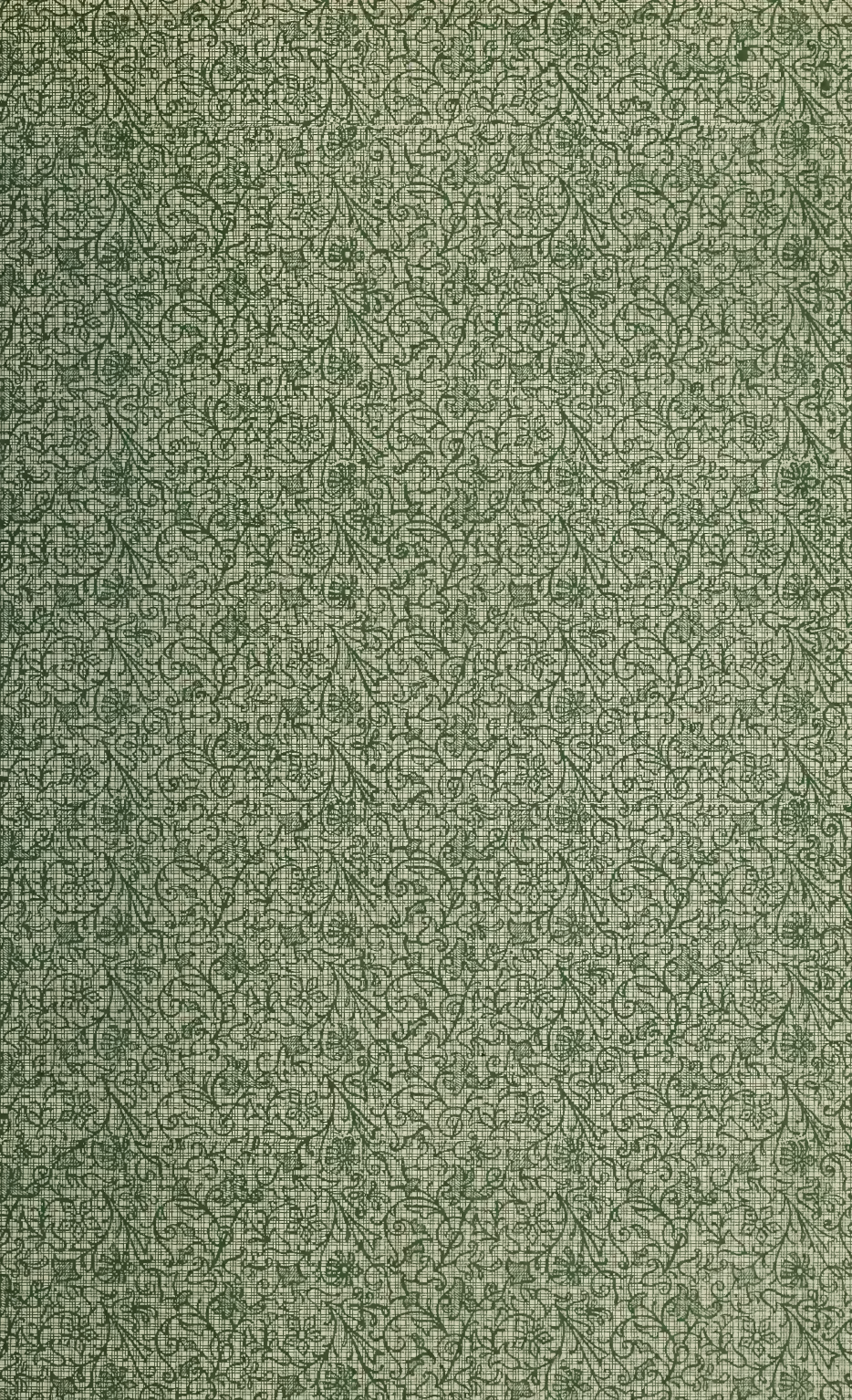
RECEIPTS FOR FARM.

1890.		
January 1.....	Potatoes.....	\$ 25
January 2.....	Milk.....	9 30
January 3.....	Bran.....	1 80
January 4.....	Wheat.....	22 50
January 4.....	680 pounds beef.....	13 60
January 6.....	1,140 pounds beef.....	28 50
January 7.....	Potatoes.....	15
January 7.....	Team hire.....	1 50
January 15.....	Potatoes.....	30
January 21.....	Milk.....	3 00
January 20.....	1 hog.....	8 40
February 5.....	Potatoes.....	25
February 13.....	Service Devon bull.....	2 50
February 17.....	Service Devon bull.....	2 50
February 17.....	Cow feed, Bates.....	2 45
February 18.....	Wood.....	2 00
February 18.....	Team hire.....	75
February 18.....	Wood.....	50
February 20.....	Wood.....	1 00
February 21.....	Wood.....	1 00
February 28.....	Wood.....	50
March 1.....	Milk.....	10 00
March 5.....	Potatoes.....	1 50
March 6.....	Milk.....	4 40
March 6.....	Team hire.....	50
March 6.....	Milk.....	2 00
March 7.....	Service Devon bull.....	2 50
March 12.....	Service Holstein bull.....	5 00
March 15.....	Wood.....	3 00
March 15.....	Wood.....	1 00
March 15.....	Service Devon bull.....	2 50
March 15.....	Wood.....	75
March 15.....	Cow feed, Bates.....	1 50
March 17.....	Service Devon bull.....	2 50
March 18.....	Service Holstein bull.....	5 00
March 22.....	Pig, Henry.....	5 00
March 22.....	Pig, Hays.....	5 00
March 22.....	Pig, Hill.....	5 00
March 22.....	Wood.....	3 50
April 2.....	Milk and wood.....	46 65
April 19.....	Wood.....	1 00
May 1.....	Milk and wood.....	35 30
May 1.....	Pig.....	5 00
June 1.....	Milk and wood.....	47 30
June 1.....	Service Holstein bull.....	5 00
June 1.....	Potatoes, Lake.....	8 40
July 3.....	Milk and wood.....	44 35
July 7.....	Bran, Bates.....	1 95
July 16.....	Service Devon bull.....	2 50
July 16.....	Team hire.....	2 50
August 2.....	Milk and wood.....	38 30
September 1.....	Milk and wood.....	30 90
September 1.....	Wheat.....	1 35
September 10.....	Service.....	1 00
October 1.....	Milk and wood.....	32 80
November 3.....	Wood.....	25 70
December 1.....	Wood and milk.....	17 50
Total.....		\$ 510 90









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